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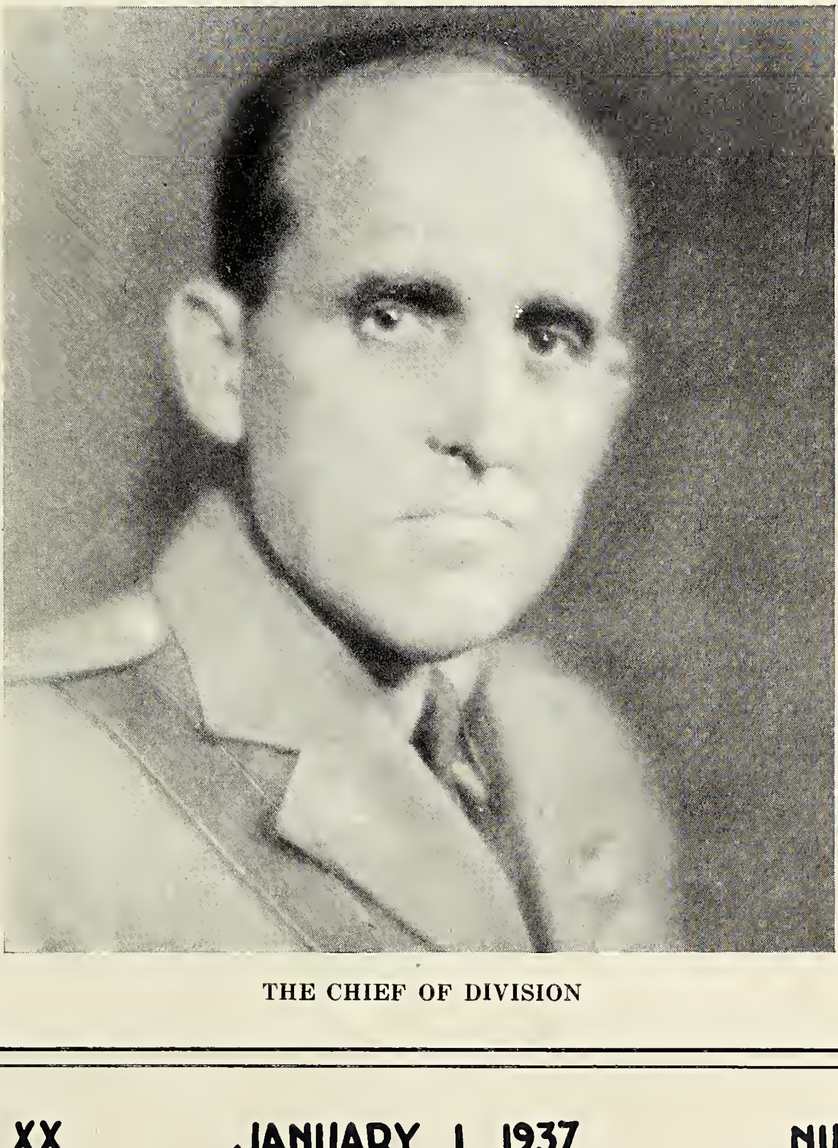
AIR CORPS NEWS LETTER

ISSUED BY THE OFFICE OF THE CHIEF OF THE AIR CORPS
WAR DEPARTMENT - WASHINGTON, D.C.

MATERIEL DIVISION NUMBER



THE CHIEF OF DIVISION

VOLUME XX JANUARY 1, 1937 NUMBER 1

Wrote the Chief of the Air Corps to the Chief of the Materiel Division, "Why Not a Feature Materiel Division Edition of the Air Corps News Letter?" * * Responded the Chief of the Materiel Division to the Chief of the Air Corps, "Why Not Indeed?" * * And So, Here It Is! We Hope You Will Like It. * * Next Month's Edition Will Be As Regular As the Revolution of the Earth and All Items From Other Air Corps Fields and Organizations Will Appear As Usual. * * This Number Is Only An "Orphan."

Happy New Year

THE MATERIEL DIVISION extends to each field, department, and office of the Air Corps HEARTIEST GREETINGS and BEST WISHES for 1937. During 1936 the accelerated procurement program for airplanes with accompanying equipment and accessories has held the center of attention. Preparation of circulars, opening of bids, performance testing, and meeting of evaluation boards have marked the months. Development of advanced equipment has for the moment been subordinated to this broader activity which has absorbed all energies of a large engineering and procurement force.

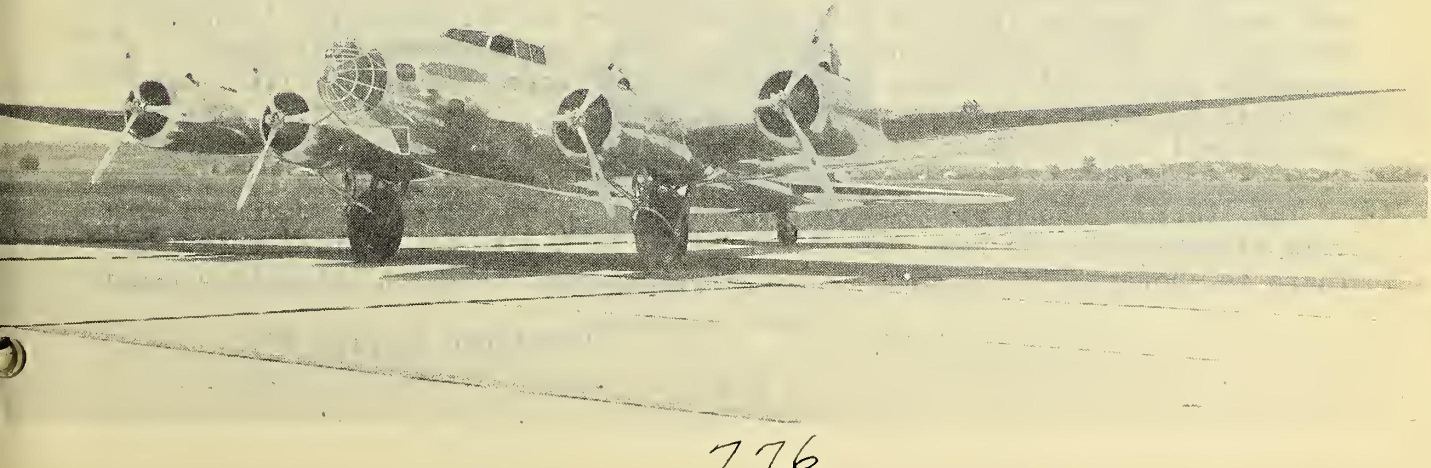
In spite of this concentration on procurement, the necessity for thinking ahead along more advanced technical lines has resulted in the appearance in the various engineering laboratories of some highly interesting projects. At all times the principle has been emphasized that the main reason for the existence of the Division is the service it renders the tactical units of the Air Corps.

Our goal is one which, in accordance with all aviation history, and because of continuing development, ever renews itself.

Again the MATERIEL DIVISION sends forth warm and sincere GREETINGS to all for 1937.

A W Robins

A. W. ROBINS,
Brigadier General,
Air Corps,
Chief of Division.



MATERIEL DIVISION ORGANIZATION

Colonel F L Martin
Executive

Major A W Brock
Asst. Executive

Brigadier General A W Robins, Chief of the Materiel Division, is assisted in his administrative duties by Colonel Frederick L Martin, Executive, who serves also as Commanding Officer of Wright Field, and Major A W Brock, Jr., Assistant Executive, who serves also as Adjutant. Functioning directly under the Chief of Division as Commandant is the Air Corps Engineering School. Functioning under the Chief of Division through the Executive are the Engineering, Field Service, Administration, Procurement, and Industrial War Plans Sections, Army Aeronautical Museum, Flying Branch, the various Post maintenance, service, and supply branches, and the Budget Office; the latter established as a separate organization during 1936 in order to effect a centralized budget control over all Materiel Division activities.

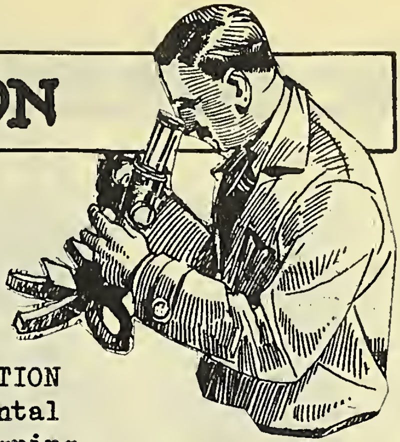
The story of these sections is told elsewhere in the News Letter. There is, however, a definite sequence in the activities of three of them: the Engineering Section is charged with the duty of the development of materiel to a point of standardization where it can be used by the Service. All data concerning the equipment developed are then turned over to the Procurement Section, which prepares circulars and executes contracts for procurement. When procured the equipment is taken over by the Field Service Section for issue to the Tactical Units of the Air Corps.

Under these sections various offices and laboratories operate not only at Wright Field but at other locations.

Working in connection with the Engineering Section is the Aircraft Radio Laboratory at Wright Field, in which two Air Corps officers, six Signal Corps officers, and 80 civilians are employed. Also co-ordinating with the work of the Engineering Section are an Ordnance Officer located in the Armament Branch, and two Corps of Engineers officers in the Aerial Mapping Unit. A Physiological Research Laboratory under

(Continued on page 25)

ENGINEERING SECTION



Lt. Colonel O P Echols
Chief

The ENGINEERING SECTION initiates all experimental work covering the designing, testing, and development of aircraft, engines, accessories, and ground equipment used in connection with the Army aircraft in accordance with an experimental program approved by higher authority. In the many laboratories under the jurisdiction of this Section will be found test equipment representing the most expert judgment obtainable involving an investment of approximately ten million dollars. Not only is this Section responsible for design, development, and testing, however, but also for the preparation of all engineering data used for evaluation and procurement purposes. During the calendar year of 1936 such data formed the basis upon which procurement of the following standard airplanes was accomplished:

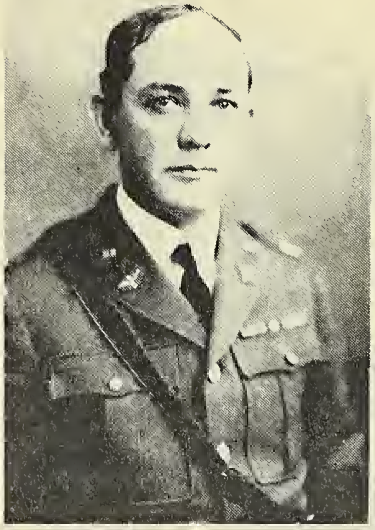
PB-2A (Consolidated) biplace pursuit, P-35 (Seversky) pursuit, A-17 (Northrop) attack, O-46A (Douglas) observation, C-33 (Douglas) cargo, B-18 (Douglas) bomber, B-17 (Boeing) bomber, Y1A-8 (Curtiss) attack, BT-9 (North American) basic trainer, BT-8 (Seversky) basic trainer, and PT-13 (Stearman) primary trainer.

The Engineering Section, besides the Administrative Office of the Chief of Engineering, is made up of the Aircraft, Armament, Engineering Procurement, Equipment, Materials, Power Plant, and Shops Branches. The work of all except the Shops Branch is treated separately. Besides routine shop work in connection with equipment, this Branch designs and builds certain necessary items which cannot be procured from the Industry.

Major F O Carroll
Assistant Chief

PROCUREMENT SECTION

Lt. Colonel H A Strauss
Chief, Procurement Section



Lt. Colonel W F Volandt
Assistant Chief

The PROCUREMENT SECTION functions as the procuring agency for practically all equipment and supplies for the Air Corps, which for the Fiscal Year 1937 has involved in excess of sixty million dollars. Of this amount approximately 51.7 per cent is required by the Appropriation Act to be expended for the procurement of new airplanes, complete, approximately 8 per cent for experimental and service test projects, and the remainder of 40.3 per cent for the necessary operating and maintenance supplies.

The organization of the Procurement Section consists of the Contract Administration Branch, Purchase Branch, Inspection Branch, and Legal Branch, which at the present time require seven officers and approximately 260 civilian employees for operation.

The mechanics of procurement are set forth very much in detail by Army Regulations and existing provisions of the law and require essentially the same procedure whether the procurement is in the amount of a few dollars or several million dollars.

The CONTRACT ADMINISTRATION BRANCH serves as a liaison between the contractor and the Contracting Officer, and in carrying out this particular duty secures information as to contractor's plant facilities, resources, finances, personnel, and other pertinent data.

The PURCHASE BRANCH with its two officers (both of whom are empowered to act as Contracting Officers), and approximately 60 civilian employees, is directly responsible for the procedure incident to securing bids, administers the resulting awards and purchase orders or contracts, and follows up the status of such orders or contracts until delivery.

The LEGAL BRANCH is necessary for determination of the great number of legal questions continually arising in connection with making awards or resulting contracts. These questions are the result, in the main, of the

(Continued on page 25)

FIELD SERVICE SECTION

Col. F D Lackland
Chief

BETWEEN the experimentation, development, service testing, and quantity purchasing of airplanes, engines, and accessory equipment on the one hand, and the tactical employment of the equipment after it has been turned over to the widely scattered organizations throughout the Air Corps both at home and abroad on the other, there must necessarily be provided a setup to furnish an adequate flow of supplies and spare parts, and a systematic procedure for properly maintaining the equipment.

The administration of this setup is the function of the FIELD SERVICE SECTION of the Materiel Division. In general, this function encompasses the activities of storage, issue, maintenance, salvage and disposal of Air Corps property after it has been standardized for military use; responsibility for preparation of instructions, estimates, schedules, programs, reports, and studies in connection therewith; and administration of the machinery for the overhaul and repair of the equipment.

The system of maintenence is administered through the Air Corps depots, the engineering and supply facilities of which are under the supervision of the Field Service Section. One lighter-than-air and four heavier-than-air depots are maintained in the United States, and one each in the Philippine, Hawaiian, and Panama Departments. Through a system of unsatisfactory reports, augmented by close personal contact between the depots and tactical organizations, all service difficulties are reported to the Field Service Section. It then becomes the function of that Section to initiate whatever action may be necessary for the correction of difficulties. A system is also maintained for issuing all necessary technical instructions covering the maintenance and operation of Air Corps equipment. These instructions are issued in the form of technical orders.

In the administration of the service of supply, a complete system of property accounting is maintained. This system is completely mechanized through the medium of a machine bookkeeping system, all transactions involving property receipts and issues being recorded, with a centralized record showing quantities on hand, location, and current consumption rates maintained in the Field Service Section. Consolidated records of all flying equipment, that is, aircraft, engines, and balloons are also maintained, showing their condition, flying time, and the status and history of each item.

The Field Service Section initiates requests for procurement of Air Corps supplies needed for maintenance of equipment in service; prepares and distributes Air Corps catalogs, Stock Lists, Handbooks of Instruction, and miscellaneous regulations as required; also supervises the loans and transfers of Air Corps property, the disposal of excess and surplus supplies, and the distribution of Air Corps supplies through the depots to National Guard Units.

(Continued on page 25)

INDUSTRIAL WAR PLANS ACTIVITIES

Lt. Col. H V Hopkins
Chief

The INDUSTRIAL WAR PLANS SECTION, under the direct supervision of the Chief of the Materiel Division, is charged with the responsibility of adequate provision for essential wartime needs in the mobilization of Air Corps materiel and the industrial organization incident thereto in accordance with the principles of procurement planning as set forth in the Industrial Mobilization Plan. This responsibility comprises studies with a view to provision for the procuring of stocks of materials, equipment, and supplies in the quantity, quality, and location required, and the assurance that production begins early, that the materiel requirements are supplied as promptly as possible, and that Naval aviation requirements are jointly considered or co-ordinated. In the performance of the mission there is involved liaison with the Office, Chief of Air Corps, Office, Assistant Secretary of War, the Army and Navy Munitions Board, and the Navy Department.

Under the jurisdiction of the Industrial War Plans Section are six Air Corps Procurement Districts, located at New York City; Buffalo, New York; Cleveland, Ohio (now at Wright Field); Detroit, Michigan; Chicago, Illinois; and Los Angeles, California. The officers in charge of these districts are Air Corps Procurement Planning Representatives.

Procurement Plans

Plans for the procurement of basic items, such as airplanes, engines, their component parts and accessories, aerial cameras, special trucks and winches, lighter-than-air equipment, etc., have been made for practically all standard types of Air Corps equipment. The plans contain detailed information regarding the items under discussion, the number required, the sources selected as most suitable to manufacture the article in the quantities required, a statement from each of the selected sources as to the rate of production possible and the percentage of the plant capacity that will be utilized in attaining this production, the estimated unit cost and the cumulative cost for the entire program covering periods of twelve and twenty-four months' requirements, transportation problems involved, and a discussion of any difficulties that might be encountered in the emergency production of the article.

Plans are normally revised every three years, but may be more often, if necessary. When a new type is adopted, it is usually necessary to write an entirely new plan, as the manufacturing phases involved are, in most cases, at variance with those of the former type. The statement from the producer as to his ability to manufacture the item is supported by a factory plan, which is prepared with the aid of the producer, or by the producer himself.

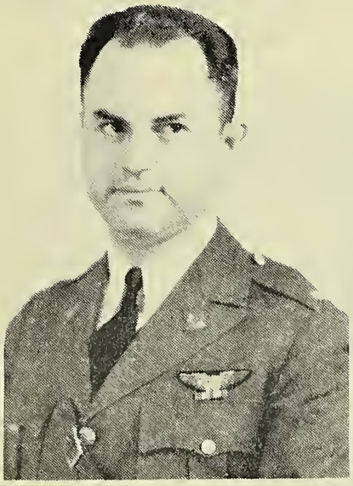
Contributory Items

When the plans for the procurement of the basic items progress

(Continued on page 26)

THE BUDGET OFFICE

The lack of a central agency controlling the preparation of the annual Budget Estimate, the defense of the Estimate before higher authority and the subsequent expenditure of the appropriated funds had, for a long time, resulted in the several sections of the Materiel Division functioning as separate and distinct little kingdoms. In February of this year, in appreciation of the paramount need of bringing the financial activities of the Division into a closer knit organization and to permit the exercise of an intelligent budgetary control, there was established in the Materiel Division a Budget Office for the co-ordination and administration of these matters. The task of establishing and operating this very important function was placed in the hands of Major Bennett E. Meyers who has been entitled Budget Officer.



Major B E Meyers
Chief

Control over the preparation and administration of the Budget necessarily involves control over the sources of information from which are obtained the data required in the preparation of the Budget Estimate. Thus the Budget Office has jurisdiction over all Material and cost accounting in the Air Corps. This includes control of the method of accounting for property at all Air Corps Activities, the reporting of expenditures and movements of property and the conversion of this information into tabulated statistical data in the Budget Office for use, not only in the preparation of the Budget Estimate but in the procurement and distribution of supplies.

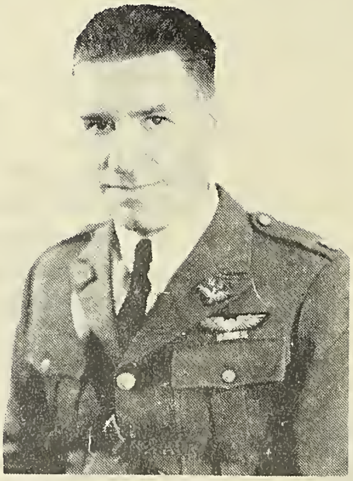
Since the flying of aircraft is the principal function of the Air Corps, it enters into the Budget Estimate as a primary factor. Hence, the recording and reporting of aircraft activity is also a matter necessarily under the control of the Budget Office. The flying data are converted in the Budget Office into statistical information paralleling the expenditure of material and labor and the whole reduced to the statement of material and labor requirement in terms of aircraft activity which is the Budget Estimate.

The use, in the Budget Estimate, of the material and labor consumption data expressed in terms of aircraft activity requires a knowledge of the probable aircraft activity during the period covered by the Estimate. To accomplish this as well as to keep the Chief of Air Corps informed in matters concerned with the future strength of the Air Corps, the Budget Office has established a method of forecasting airplane balances. This involves the establishment of limiting repair costs on airplanes, the limitation being determined by the age of the airplane according to an established depreciation rate.

The magnitude of the work of

(Continued on page 26)

AIRCRAFT BRANCH



Major H Z Bogert
Chief

The AIRCRAFT BRANCH is proud of its position among the aristocracy of aeronautical pioneering organizations. It has given not only many major contributions to aeronautical science but men also to the American industry. Among the former are monocoque airplane construction, dynamically balanced control surfaces, the enclosed cockpit, pressure cabins, and the retractable landing gear. The Branch has also been largely responsible for establishing present-day standards of manufacture and criteria of design.

Among the men drawn from the Aircraft Branch into positions of outstanding importance in the aeronautical world are — Klemin, Monteith, Kindelberger, Cover, and Doolittle. Still serving in the Branch are a number of persons of considerable reputation to whom the Air Corps is indebted for much of its progress. Among these are — P B Smith, D A Dickey, W E Savage, T de Port, J A Roche, and E R Weaver.

The functions and responsibilities of this Branch to the Materiel Division and to the Air Corps are outlined in a book of considerable length, so an extremely brief sketch only is attempted here.

The Aircraft Branch is divided into six major laboratories under the Chief, Major H Z Bogert.

The STRUCTURES DEVELOPMENT AND TEST LABORATORY, under the direction of Captain P H Kemmer, is charged with stress analysis of all aircraft submitted to the Air Corps, testing the structural strength of those purchased, and developing, through test and research, new methods of assembling aircraft structures. To this group, at that time under the direction of Captain C F Greene, the world owes the all-metal monocoque airplane; and through its efforts there is now being constructed the first substratosphere airplane complete with supercharged cabin.

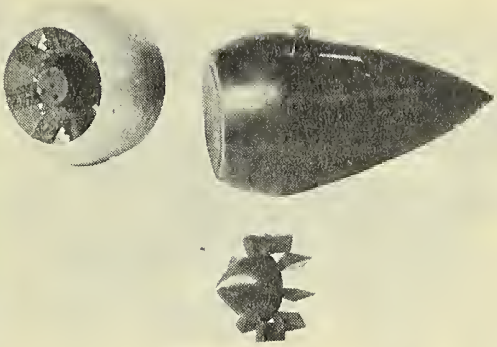
The SPECIAL RESEARCH AND TEST LABORATORY, under Lieutenant R C Wilson, is charged with the preparation of airplane design studies from which military characteristics are established, the preparation of specifications covering the airplane proper, the evaluation of the airplane proper submitted on competition to the Air Corps, and the correction of unsatisfactory design features after the airplane is in service.

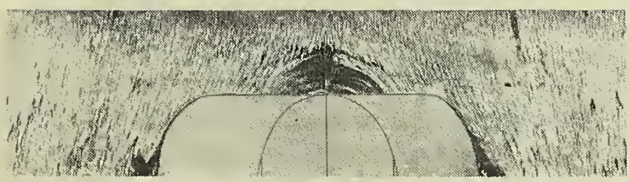
This Laboratory is constantly investigating new and novel designs and design details and developing standards wherever they apply. One of its primary functions is the development of projects

INVESTIGATION OF AIR FLOW

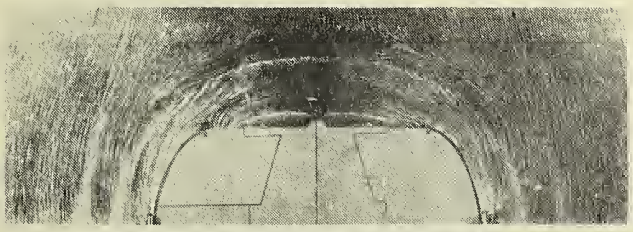
MEASURING DRAG OF COWLING OF AN AIR-COOLED RADIAL ENGINE NACELLE AND THE AMOUNT OF COOLING AIR PASSING THRU

Incidentally the velocities of the air at various points in the propeller disc were measured during these tests, this being the first time this feat has been accomplished.



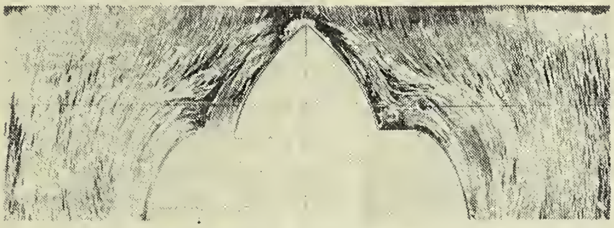


AIR FLOW LINES AROUND AN UNCOWLED AIR-COOLED RADIAL ENGINE AS TESTED IN WRIGHT FIELD 5-FOOT WIND TUNNEL



AIR FLOW LINES AROUND A COMPLETELY COWLED AIR-COOLED RADIAL ENGINE WITHOUT SPINNER

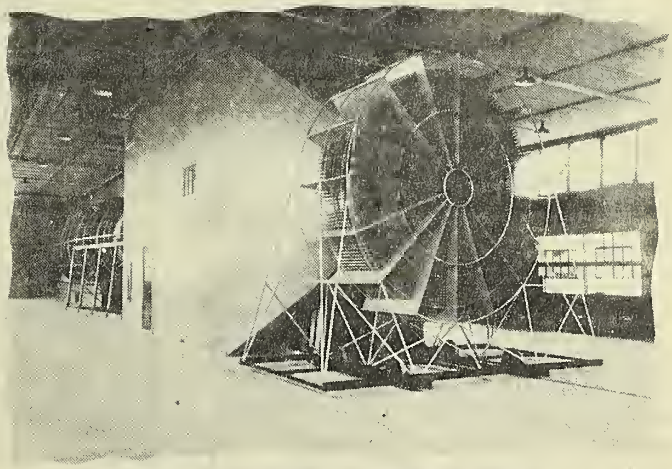
COWL ASSEMBLIES FOR IMPROVING THE COOLING OF AIR-COOLED RADIAL ENGINES ON MULTI-ENGINED AIRPLANES



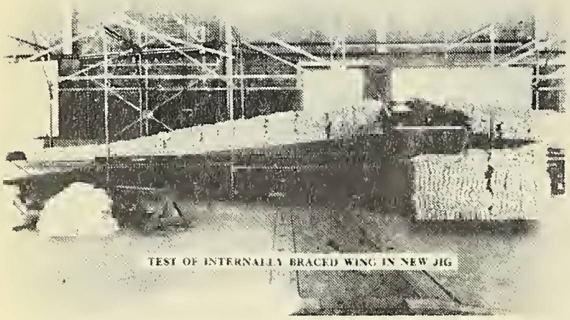
AIR FLOW LINES AROUND A COMPLETELY COWLED ENGINE WITH SPINNER

VISUALIZING AIR-FLOW AROUND THICK AIRFOIL SECTIONS USING TITANIUM TETRACHLORIDE PAINTED ON LEADING EDGE

(Test made in 14-inch high speed wind tunnel)



MATERIEL DIVISION 5-FOOT WIND TUNNEL AS ERECTED AT WRIGHT FIELD



TEST OF INTERNALLY BRACED WING IN NEW JIG

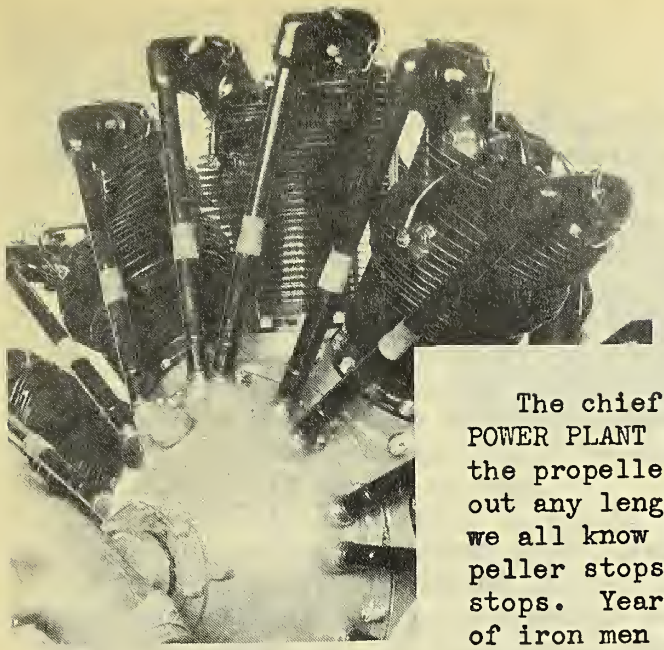
of extremely experimental nature which are usually of secret status.

The PROPELLER RESEARCH AND TEST LABORATORY, under Captain T A Sims, Jr., passes upon the design, and conducts exhaustive tests to determine the characteristics of each type of propeller accepted by the Air Corps. In addition, it is continuously engaged in research and development of new types. The field of its endeavors has been greatly increased by the introduction of controllable and constant speed propellers and by the rapid rise in engine horsepower. This Laboratory conducts all the propeller tests for the Navy and Department of Commerce and is the prime source of propeller engineering data in the United States. It is at present engaged in the development of opposite rotating propellers on a single shaft, a project made necessary by the introduction of great horsepower in airplanes of short span.

The AERODYNAMICS RESEARCH AND TEST LABORATORY, under Lieutenant H M McCoy, is engaged in developing methods of calculating performance, predicting performance by means of the wind tunnels, and actually measuring the performance of an airplane in flight. This Laboratory has made many contributions to the theory of aerodynamics and to the technique of wind tunnel operation. Its latest development is the photographic method of measuring performance in landing and take-off. At present it is engaged in developing methods for measuring static thrust, ground friction, and net accelerating forces of actual airplanes as well as a method for measuring torque and thrust of an engine-propeller combination in actual flight. The Laboratory has contributed much to the establishment of criteria for aerodynamic shapes, such as control surfaces, fairings, fillets, and the like, and for this purpose operates two wind tunnels of 265 m.p.h. and 500 m.p.h. velocity, respectively.

The ACCESSORY DESIGN AND TEST LABORATORY, under the direction of Lieutenant M S Roth, is charged with the development and test of wheels, brakes, tires and tubes, landing gear complete with retracting mechanism, skis, floats, hulls, and allied parts of the airplane. Wheels and brakes are constantly being tested in order to produce correct drum and brake lining combinations; and oleo legs and retracting mechanisms are tested for each type of airplane. This Laboratory is at present engaged in perfecting hydraulic and pneumatic mechanisms for use on aircraft, a new type to replace the streamlined type now in service, and a radically different type of landing gear designed for instrument landings and take-offs.

The LIGHTER-THAN-AIR UNIT, under P B Smith, is engaged in the development of Air Corps balloons and balloon accessories, and in the correction of design faults which develop in service. This Unit is largely responsible for the TC-13 and is now projecting plans for the development of future Air Corps types.



POWER PLANT DEVELOPMENTS

Major E R Page
Chief

The chief function of the POWER PLANT BRANCH is to keep the propeller turning. Without any lengthy discussion, we all know that when the propeller stops everything else stops. Years ago, in the days of iron men and wooden ships and poor engines, forced landings were frequent and, thanks to slow airplanes, a cow pasture usually sufficed. Today most cow pastures are not quite large enough for our high performance airplanes, especially if loaded. A proportionate increase in engine reliability now lessens the possibility of that awakening clatter, that sputter, that puff of smoke, that splatter of oil, followed by that awful silence as you start gliding down to a forced landing, or a jump if old terra firma under you does not look so good.

Next time you start across the Rockies, Hell's Half Acre in West Texas, or the swamps of Louisiana, give a few moments of thought to the years of development of that engine. No one man, no one company, no one organization can take full credit. Engines were not invented over night from bright ideas; they have been developed over a period of years by hard, painstaking work and, incidentally, at great cost.

The Power Plant Branch has contributed its share to the development and research of modern engines and accessory gadgets. Its chief concern is to give to the service the best, the most reliable engine at the earliest possible date. It works in conjunction with the various manufacturers who produce the finished product for test. The test consists of running the engine at various speeds and power loadings with controlled temperatures and pressures, simulating standard sea level conditions and the various conditions at altitudes. Contrary to the optimistic manufacturer and the rosy picture painted in an aviation magazine article featuring that certain engine used in a sporty racer in a record-breaking dash across the country — engines don't usually breeze right along through tests.

In the Power Plant Branch they must prove themselves capable of routine, day-to-day, for continued military service. Does number so-and-so cylinder cool properly? Does such and such a bearing get sufficient oil? Are the clearances on such and such a part too large or too small? Why did the case crack after so many hours on the test stand? Why the excessive vibration at such and such an r.p.m.? And so on for hundreds of other minor troubles found here in type tests of engines. Is it best to find out all those troubles on the test stand or over the Alleghenies, ceiling zero?

The first article of any experimental engine development is subjected to a 50-hour Development Test, following which any changes found necessary as a result of this test are incorporated. The engine is then subjected to a Type Test of 150 hours' duration. The successful completion of this test establishes the engine as an Air Corps type. Each model of each type of engine is subjected to this Type Test before it is assigned an Air Corps model designation and considered satisfactory for use in military aircraft. The duration and severity of this type test usually brings out the major troubles in any model engine, although the Service Test of the engine will undoubtedly reveal further troubles of a nature likely to be encountered in service. If the engine possesses unusual military value, it is a year or more before release is granted for use on commercial air lines or for export to foreign countries. Close liaison with commercial air lines offers a trade of ideas for mutual benefit.

Quoting from a recent report, the "Power Plant Branch activities during the past fiscal year have been concentrated on increasing the power output of engines in service, development of new types of engines, improved fuels to permit greater power output and lower fuel consumption, an extension of supercharging to higher powers and altitudes, and the development of an oil dilution system for cold weather starting. Considerable progress has been made in the development of engine accessories, such as vacuum pumps, long reach spark plugs, magnetos and shielding, engine-driven gear boxes for accessory drives, hydraulic fuel pump drives, fuel pressure regulators, automatic oil temperature control valves, automatic supercharger regulators, automatic mixture controls, fuel injectors and controls, and hydraulic engine controls," all for the benefit of those who fly. The general trend in engine improvement is to take as much responsibility as possible from the pilot's already crowded mind, by replacing the great mass of control handles and gadgets by foolproof automatic controls, out of sight and, we hope, out of mind.

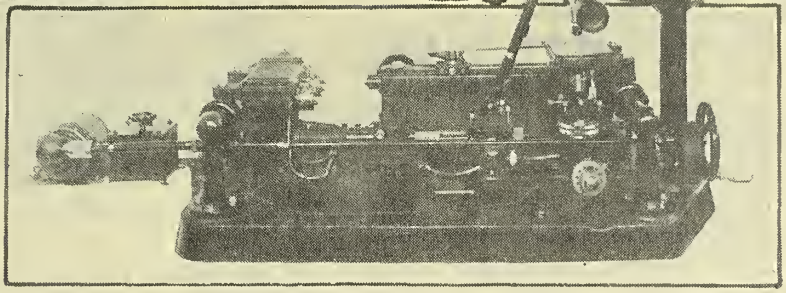
Snow in Summer Time

Recently, a visiting pilot in the Power Plant Branch was quite surprised to see men in winter flying clothes in the hallways of our Dynamometer Laboratory, especially so, as it was well over one hundred in the shade outside. Since some men were working in shirt sleeves and others in winter flying suits, somebody must be wrong. We followed the men in winter flying clothes to the cold room but not into the cold room. After the men had disappeared through the set of double icehouse doors, we peered in through a set of windows. There was snow on the cold-room floor and icicles hung from most of the objects. An engine was installed on a test stand. Even though we were warm it made one shiver to watch the Eskimo-like men at their routine work testing some gadget.

We checked up on this installation and found it quite a glorified ice plant, capable of cooling 185 pounds of air per minute from 100° F. to -55° F. Power required to operate the plant is some 1800 kw. for an 8-hour day. Approximately 20 tons of cooling coils are required, not to mention cork and other insulating material.

And what is all this for? Most airplanes work very well on a sunny summer day. But how about winter time when the mercury is around zero or below? That's the excuse for the cold room. Here has been developed most of our ideas on oil, gas, and starting troubles in cold weather. Even though perfection has not been reached, sound progress has been made. Next time you are at Wright Field try to include the cold room on your Cook's tour.

MATERIALS RESEARCH



J B Johnson
Chief

THE MATERIALS BRANCH combines the functions of a service organization and a research laboratory. In the former capacity, it does a large amount of testing in connection with the Procurement Program of the Air Corps and acts as a control laboratory by preparing specifications and developing and maintaining standards for the testing and inspection of material and processes at the contractors' plants. Research may be divided into two categories, one which determines the applicability for aircraft construction of materials submitted by the Industry to the Materiel Division, and the other which requires the development of a new process or material in which industry may not be interested on account of its limited application.

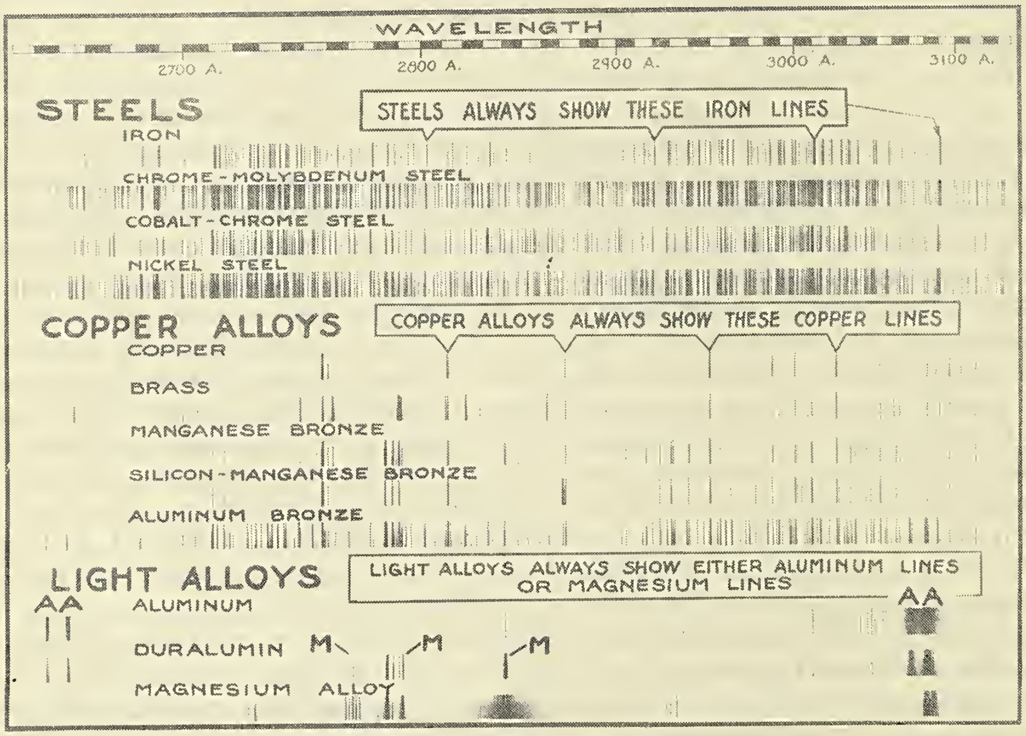
A wide variety of products is covered. Not only are the materials for the construction of airplanes, engines and accessories constantly being improved, but there are hundreds of items used in connection with maintenance such as paper, cleaning rags, sawdust, soaps, and tools for which specifications must be prepared since no other Government agency is interested.

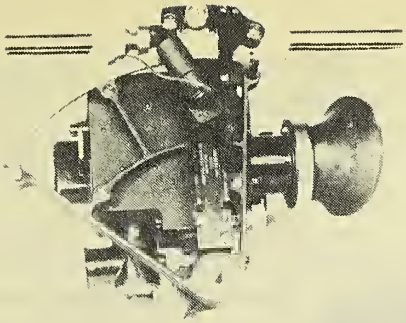
A change in one material or process generally leads to new requirements. The Air Corps has standardized on unpainted metal surfaces for airplanes. An aluminum-coated sheet was selected as the basic material after an exhaustive laboratory investigation of its mechanical properties, corrosion tests in the bay at Chapman Field, and service tests on Army transport airplanes. Spot welding of this material with elimination of the drag from rivet heads and lower cost of fabrication looks promising. The Division is cooperating with the Industry to establish a technique for uniformity and reliability of spot welding. The metal surfaces must be cleaned and polished to give a good appearance, and must not be attacked by the cleaner. A mixture of diatomaceous earth, soap, and naphtha has been developed.

The fact that gasoline swells rubber is well known and for several years the Industry has tried to get a superior product. The new synthetic products, Thiokol and Duprene, have been applied by the Division for the inner lining of hose for oil, gasoline, prestone, dope, and lacquer. This is a universal hose suitable for all liquids and identified by a red and white stripe along its length. Natural rubber is also a strategic material and Duprene has been adapted as a coating for an observation balloon which has been on service test at Fort Sill, Oklahoma for approximately five months, and was used successfully in the summer maneuvers in Michigan and Kentucky.

The probability that airplanes will fly at high altitudes has brought up many questions in connection with materials for this service. The properties must not change at the lower temperatures. Complete properties of all the structural material under static, impact, and vibration are being obtained in a room refrigerated to -50° F. The windows must withstand an internal pressure and it became necessary to obtain the physical properties of glass and glass substitutes. New resinous materials with the transparency of glass but considerably stronger offer a solution of this problem.

In the field of materials competition is very keen and new materials are constantly replacing the older ones. Each new material brings up fresh problems in connection with fabrication, protection from corrosion, as well as a study of its fundamental properties in tension, twisting, and fatigue. To carry out this work requires laboratory equipment of high accuracy and a wide range of adaptability. The laboratory at Wright Field has facilities for determining the presence of the most minute amount of an element in a material by means of its spectrum, or can test to destruction full-size parts for airplanes which may carry a load of 600,000 pounds.





EQUIPMENT BRANCH

The EQUIPMENT BRANCH of the Engineering Section consists of six Laboratories:

Instrument and Navigation
Electrical
Parachute and Clothing
Aerial Photographic - includes Aerial Mapping Unit of Corps of Engineers
Miscellaneous Equipment
Physiological Research

There are approximately 500 items of ground and air equipment for which this Branch is responsible—research, development, and standardization. A brief resume', showing the trend of development is given.

Instrument and Navigation Laboratory

A Douglas C-33 airplane for the conduct of experimental flight tests in connection with the various projects under development has recently been assigned to this laboratory. This airplane has been utilized in testing such devices as improved gyro octants, drift sights and signals, automatic pilots, and navigation computers of various types.

Among the interesting projects now under development is a tachometer that records engine running time. In addition to the pointer which indicates engine r.p.m.,two small dials are provided, one to indicate accumulated engine time up to 500 hours, the other to indicate "trip" time. Only the latter counter can be reset from the face of the instrument.

Major F S Borum
Chief

A synchronous control for multi-engine installations has shown promise of early accomplishment. An experimental model of this device has been operating on bench tests and automatically synchronizes speeds much better than can be accomplished by manual control.

Instrument test equipment of a portable nature is nearing completion and it is anticipated the service activities will be supplied with this essential equipment in the early part of the coming year.

Electrical Equipment

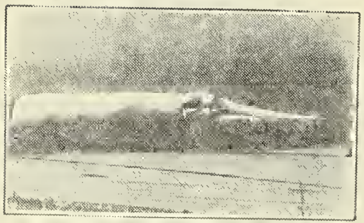
Aircraft and ground lighting equipment are keeping pace with the requirements of advanced aircraft and the needs of the latest landing field installations. New equipment under development includes portable-by-air lighting equipment for landing fields.

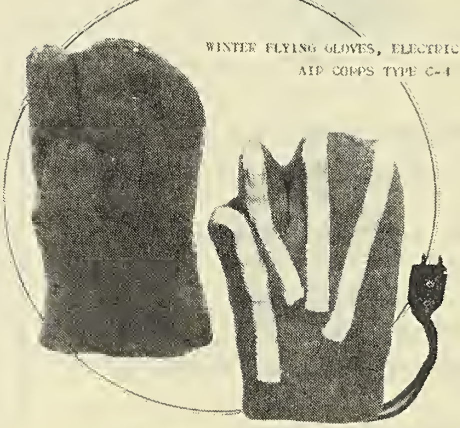
Electrical development has been characterized by exploration into the field of alternating current for aircraft application. An experimental installation will be made during the present fiscal year.

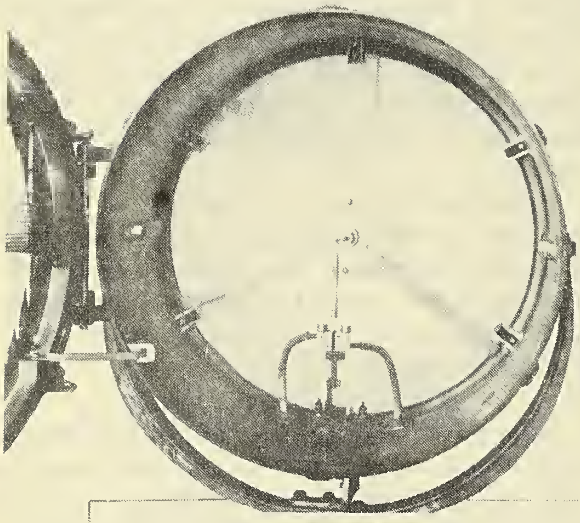
Parachutes and Clothing

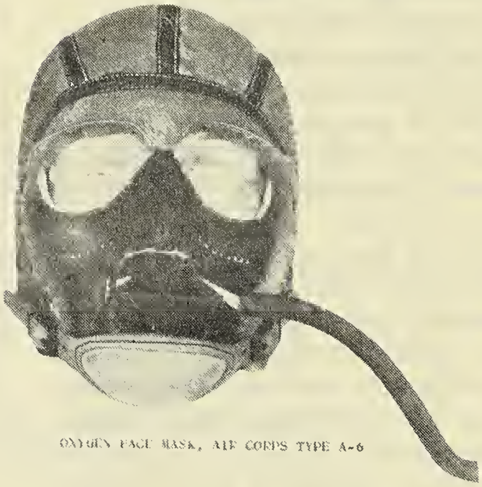
Present parachute development is concerned with high-speed opening parachutes for use in the faster military airplanes. Improvements in winter flying clothing are concerned mainly with those changes made necessary by changes in air-

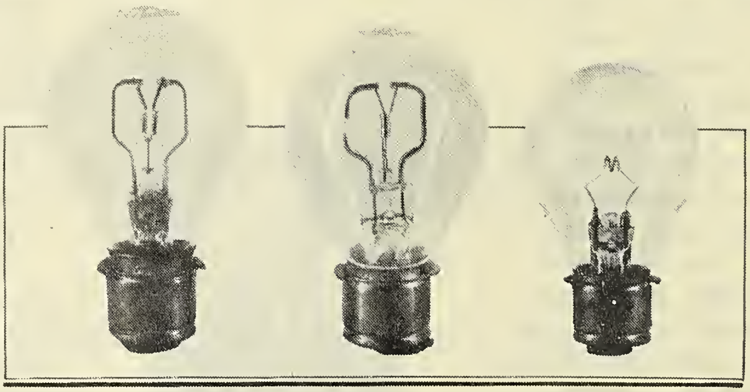
MISCELLANEOUS EQUIPMENT


ANTI-AIRCRAFT HIGH SPEED TOW TARGET
AIR CORPS TYPE B-12


WINTER FLYING GLOVES, ELECTRICALLY HEATED
AIR CORPS TYPE C-4


LAMP GAUGE FOR FOCUSING FLOODLIGHT


OXYGEN FACE MASK, AIR CORPS TYPE A-6


COMPARISON OF LANDING LIGHT
LAMP FILAMENTS, AIR CORPS TYPES
C-2, C-8 and CC-2

plane design. A shoulder type safety belt is under development as a means of preventing head injury to the pilot in the event of a crash.

Aerial Photography

A self-contained photographic laboratory automobile trailer unit has been developed having one room completely equipped for printing and one for film processing and print finishing. The Unit houses its own ventilating system, water supply, electric power plant, chemical and material supply, together with all photographic accessories necessary to produce complete mosaics wholly within the Unit.

Miscellaneous Equipment

Progress is being made in the development of steam operated external energizers designed especially for use in cold weather. The equipment consists of a small automatically controlled steam generator weighing about 100 pounds and a steam-driven external energizer.

Physiological Research Laboratory

One of the most interesting projects of this Laboratory is an investigation of the effect of centrifugal force on pilots. The equipment for this research consists of a long rotating arm with a seat bolted to its outer end. Powered by a large electric motor this arm is rotated at speeds up to 80 r.p.m. at which speed a force of twenty times the pull of gravity is developed. Members of the laboratory are acting as experimental subjects up to 8 "G's" and anesthetized experimental animals for the higher forces which may produce permanent or fatal injuries.

STRATOSPHERE FLIGHT REPORT

An Engineering Section Memorandum Report on results of the 1935 Stratosphere Flight, prepared during 1936, states that all instruments and apparatus functioned as planned throughout the flight, with the exception of the three-blade 45° pitch propeller at the end of a yardarm, which failed to turn the balloon and gondola about a vertical axis above 62,000 feet because of the extreme thinness of the air. If another stratosphere flight were to be made, the experience of the last two flights indicates that it is possible to carry at least 1,000 pounds of scientific instruments to an altitude 10,000 feet higher than the altitude attained on the last flight.

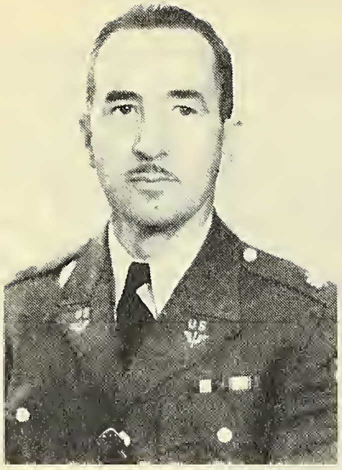
PARACHUTES

The quick-attachable, Type A-2 parachute has been standardized. This parachute is composed of a standard Type S-1 hemispherical canopy attached to a conventional design pack assembly having one point steel coupling means for attachment to the harness. The harness assembly used with the Type A-2 is of the cross webbing cradle design and contains the female member of the steel coupling located below the chest for attachment of the pack assembly. The operation and maintenance of the Type A-2 is identical to the present standard hemispherical types.

PELORUS, TYPE A-2

An Engineering Section Memorandum Report states results of experimental tests on the Type A-2 Pelorus,—a mechanical instrument used for taking bearings from an airplane in the air, both celestial and terrestrial. The experimental tests were satisfactory and steps are being taken to procure a quantity for service test.

ENGINEERING PROCUREMENT BRANCH



Major C F Greene
Chief

The ENGINEERING PROCUREMENT BRANCH was created by the Chief, Engineering Section in May, 1935, to handle the engineering work pertaining to aircraft procurement and in particular to meet the demands of the Accelerated Aircraft Procurement Program then under way. In order to conduct all phases of this work under the close supervision of the Chief of the Section, the following existing agencies were assembled to form the new branch: Project Officers and Engineers (4 Units); Specifications, including Army-Navy Standards and Army-Navy Commerce Requirements; Drafting & Records.

The Project Officers were transferred from the Aircraft Branch and with civilian Project Engineers formed the following Project Engineering Units: Attack and Observation (Amphibian and Autogiro), with Captain P W Timberlake, Project Officer, and L V Cook, Project Engineer; Bombardment, with Lt. L F Harman, Project Officer, and O H Snyder, Project Engineer; Pursuit, with Lt. B S Kelsey, Project Officer, and J R Austin, Project Engineer; and Training and Transport, with Captain L C Craigie, Project Officer, and R L Montgomery, Project Engineer.

These Units were charged with the duty of assembling and co-ordinating all technical data required for the procurement of complete aircraft. This work includes the preparation of the initial type specification to the final adjustment of deficiencies or changes found necessary during the course of the contract. In the case of a standard procurement, it includes the preparation of Method of Evaluation, the distribution to the technical branches of technical data pertaining to bids, the assembly of records of the Evaluation (Technical) Committee, compilation of entire Evaluation Proceedings including Report of Utility Board, co-ordination and approval of final detail specification and contract (in the case of the winning bidder) and lastly, the co-ordination of engineering releases on shop drawings and the furnishing of decisions on the many details of adjustment incidental to the manufacture in quantity of complex types of airplanes which are being produced in quantity for the first time. This detail adjustment might extend well beyond the delivery of the last airplane of a contract, dependent upon the degree of responsibility of the contractor.

The Project Officer must follow the production of a type from its inception in the form of basic "Military Characteristics" through the above procedure to the delivery of the last airplane. This includes the keeping of a file of data on foreign airplanes of corresponding types as well as data on all previously constructed domestic aircraft of record to date. It means that the Project Officer conducts a complete specialized engineering office pertaining to the types assigned and is the direct representative of the Chief Engineer on all engineering matters pertaining to those types. He must make visits to the manufacturing plants and to tactical activities operating the airplanes. He must fly demonstration airplanes as soon as they are made available by the Board. In collaboration with the Air Corps Representative at the manufacturer's plant he flies and usually ferries to Wright Field the first or an early article of a contract. He is a member of the Mock-Up Board and an observer of the static test. He watches the inspection and weighing and initiates all orders affecting airplanes which come to Wright Field for demonstration, test, acceptance, or modification.

Under the present procurement system he is obliged to avail himself of every opportunity to fly and to obtain other pilots' comments on the demonstration airplane or the first article of a contract, in order to sandwich as much of a service test into the proceedings as possible prior to the actual establishment of shop production systems and the "freezing" of the type.

During the past calendar year this Branch has handled the procurement engineering work involved in the manufacture of about 1,230 aircraft including three autogiros, These 1,230 airplanes, about one-third of which have been delivered, were of approximately thirty distinct types which could be further broken down into about forty variations. These represented actual manufacturing or rebuilding contracts and did not include the handling of data submitted informally, examination of foreign and racing plane data, and the many special studies, reports, and investigations which were required from time to time for the information of the Chief Engineer or for transmittal to higher authority.

The Specifications Unit prepares, distributes, and keeps on file all procurement specifications used by the Air Corps. In addition, B F Senart, the Unit Chief, is charged with the duty of maintaining all records, conducting all co-ordination within the Division of the immensely useful and growing Army-Navy Standards, and all matters pertaining to Army-Navy Commerce Requirements.

The Drafting and Records Unit, under E C Duval, is charged with the duty of preparing, checking, and distributing all graphic information for the guidance of contractors.

It maintains the Air Corps Standards Book and the Drafting Room Manual. For reproducing drawings for contractors and for distribution to service activities, six blue printing machines are in continuous operation. The output of these machines amounted to about 2,700,000 pieces during the past year. Next year it is estimated that about 3,000,000 prints will be needed.

Throat Microphone

A Board for the evaluation of a new type throat microphone to be used in radio communication convened December 10th at the Materiel Division.

Board members were: Lt. Colonel A H Gilkeson, Langley Field; Capt. A W Marriner, Office, Chief of Air Corps; Capt. T H Baxter, Barksdale Field; and Major Harry Reichelderfer, Capt. F L Ankenbrandt, and Lt. D C Doubleday from Wright Field.

SECTION AND BRANCH CHIEFS

Lt. Col. D. B. Howard
CHIEF ADMINISTRATION SECTION

Maj. M. G. Estabrook
CHIEF ENGINEERING SHOPS BRANCH

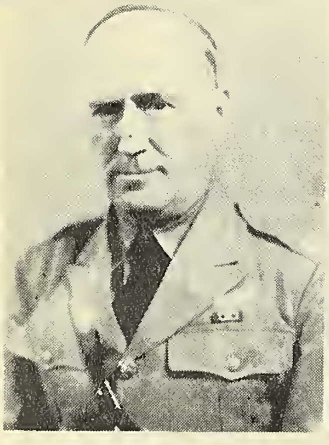
Maj. J. F. Powell

Maj. H. G. Montgomery

Maj. C. F. Wheeler

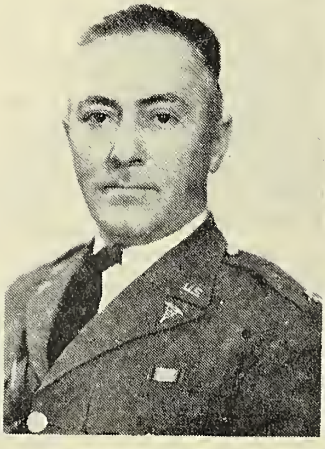
Capt. H. G. Woodward

INDUSTRIAL WAR PLANS SECTION



Capt. J. M. McDonnell
INDUSTRIAL WAR PLANS SECTION

Maj. L. L. Beery
STATION TECHNICAL INSPECTOR



Maj. C. J. Baker
SURGEON

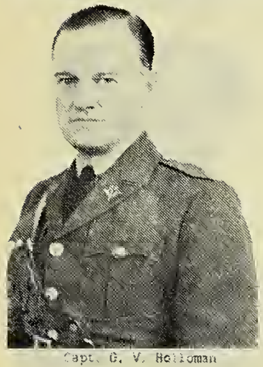
Maj. R. C. Bower
QUARTER-MASTER & CONSTR QUARTER-MASTER

Maj. A. W. Stevens
Equipment Branch

Capt. H. G. Armstrong
Equipment Branch

Capt. G. W. Goddard
Equipment Branch

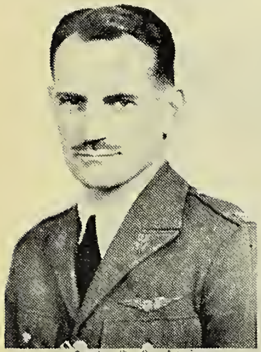
Captain C. J. Crane
Equipment Branch

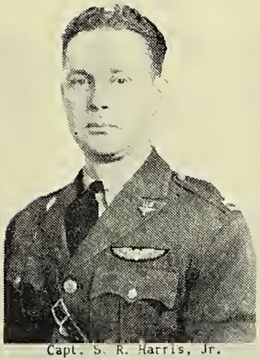

Capt. G. V. Holloman
Equipment Branch

Lt. T. L. Thurlow
Equipment Branch

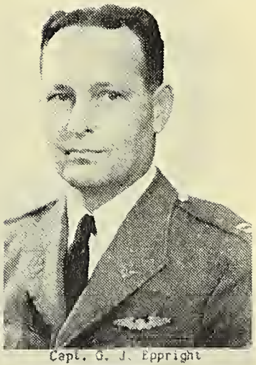
Lt. D. B. White
Equipment Branch

Lt. C. C. Munroe, Jr.
Equipment Branch


Capt. F. G. Irvin
Flying Branch

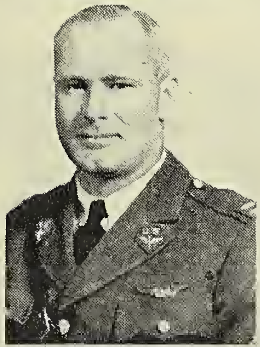

Capt. S. R. Harris, Jr.
Flying Branch

Capt. C. W. O'Connor
Flying Branch


Capt. G. J. Eppright
Flying Branch

Lt. M. D. Burnside
Armament Branch

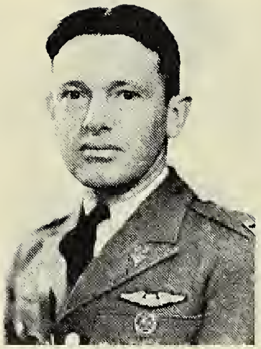
Lt. P. E. Shanahan
Armament Branch


Capt. E. T. Kennedy
Purchase Branch

Capt. E. H. Snodgrass
Purchase Branch

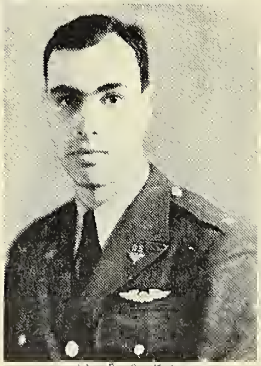
Major E. M. Powers
Engineering Section

Capt. P. W. Timberlake
Eng. Proc. Branch


Captain L. C. Craigie
Eng. Proc. Branch

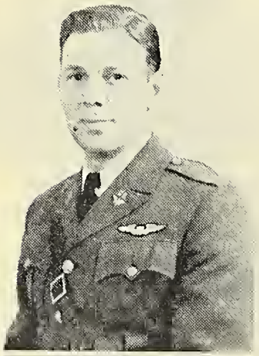
Capt. C. S. Irvine
Engineering Section

Lt. L. F. Harman
Eng. Proc. Branch


Lt. B. S. Kelsey
Eng. Proc. Branch

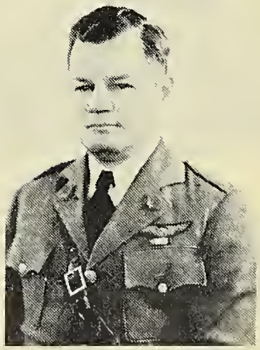
Capt. P. H. Kemmer
Aircraft Branch

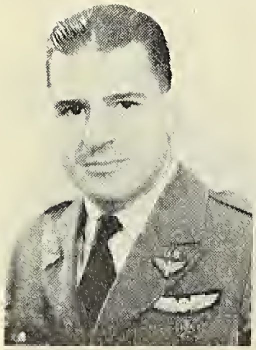
Captain T. A. Sims, Jr.
Aircraft Branch


Lt. M. S. Roth
Aircraft Branch

Lt. H. M. McCoy
Aircraft Branch

Capt. A. H. Johnson
Power Plant Branch


Capt. C. A. Bassett
Power Plant Branch

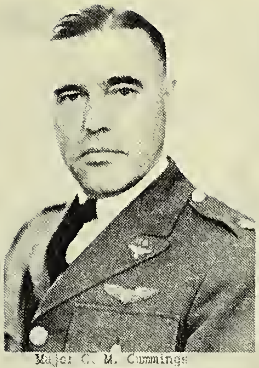

Capt. F. D. Klein
Power Plant Branch

Lt. G. F. Smith
Power Plant Branch

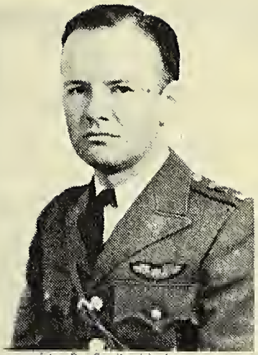
Lt. P. H. Robey
Power Plant Branch

Lt. J. W. Sessums, Jr.
Power Plant Branch

Capt. A. H. Schwichtenberg
Assistant Surgeon

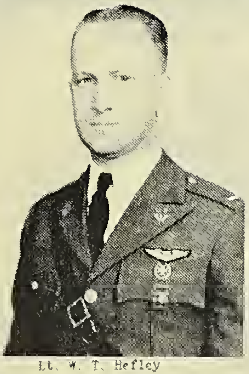


Major C. M. Cummings
Aircraft Radio Laboratory



Lt. D. C. Doubleday
Aircraft Radio Laboratory

Capt. A. A. Kessler, Jr.
Field Service Section



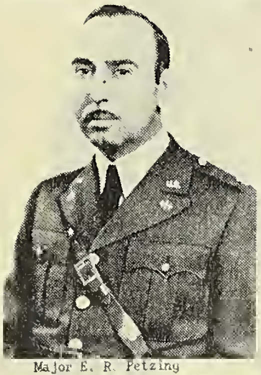
Lt. W. T. Hefley
Field Service Section

Lt. J. L. Jackson
Field Service Section

Lt. E. W. Rawlings
Field Service Section

Major A. M. Shearer
Aircraft Radio Laboratory

Major H. Reichelderfer
Aircraft Radio Laboratory

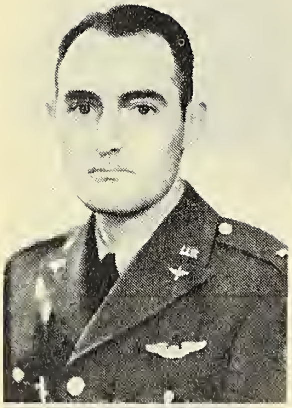


Major E. R. Petzing
Aircraft Radio Laboratory

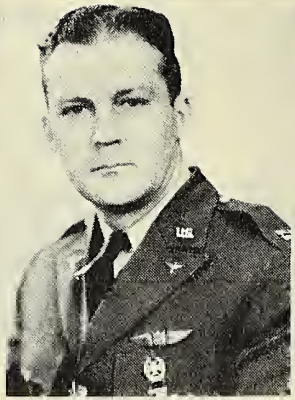
Captain W. T. Guest
Aircraft Radio Laboratory

Captain B. Stern
Meterologist

Capt. F. L. Ankenbrandt
Aircraft Radio Laboratory



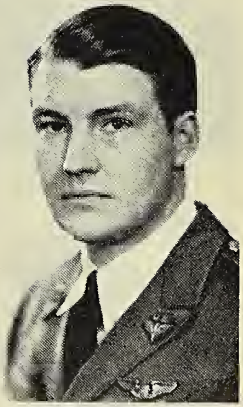
Lt. E. H. Beebe



Capt. J. G. Moore

Capt. R. E. Culbertson

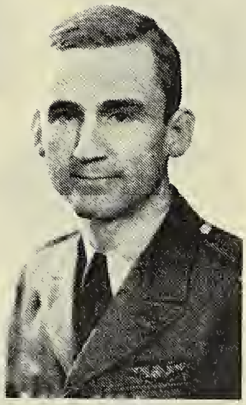
Air Corps Engineering School



Lt. H. G. Bunker

Lt. D. J. Keirn

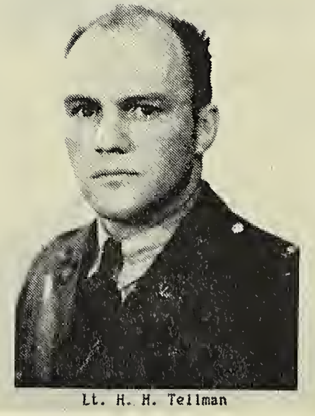
Lt. T. B. McDonald



Lt. L. E. Massie

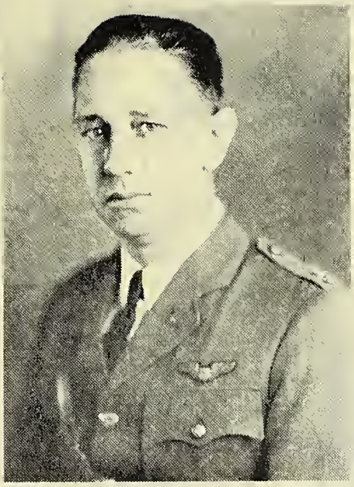
Lt. D. L. Putt

Lt. S. A. Redetzke



Lt. H. H. Tellman

Capt J. Hicks

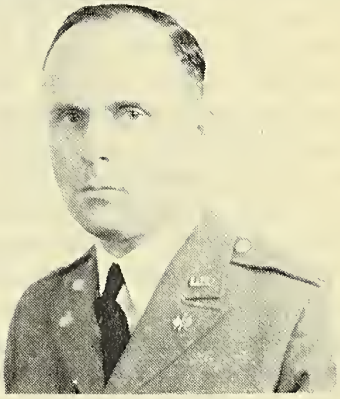

Maj. H. A. Bivens

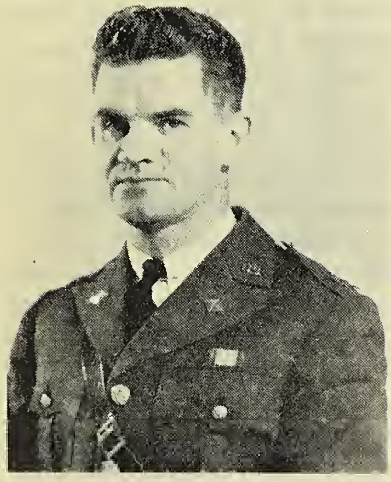
Lieut. J Austin

FIELD SERVICE SECTION

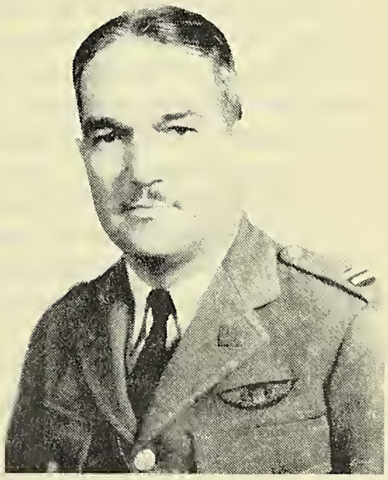
Maj R. W Propst
CHIEF PURCHASE BRANCH

Capt. F. H. Vanderwerker
CHIEF LEGAL BRANCH


Capt R. P Lyman
POST SIGNAL OFFICER


Capt. J. F. Connell
FINANCE OFFICER

Capt. J. A. Madarasz
SUPPLY OFFICER


Capt T. H. Chapman
CHIEF INSPECTION BRANCH

ARMAMENT

BRANCH

Major J A Woodruff, Chief

The ARMAMENT BRANCH is responsible for the development of all items of armament equipment necessary to the complete complement employed in military aircraft, with the exception of those furnished by other Supply Branches of the Army, in which cases the Armament Branch is responsible for the provision of correct installation and proper functioning.

In the execution of these duties, it is necessary to prepare military characteristics applying to those items furnished by other Branches and to conduct actual development work on those armament items for which the Air Corps is responsible. For Air Corps developments, the Armament Branch prepares initial design and procurement data on the basis of existing requirements, and conducts thorough experimental tests prior to the release of data for service test procurement. Service tests of the items determine adoption, rejection, or continued development.

The Branch is also responsible for the preparation of portions of airplane specifications dealing with provisions for armament, and the determination by airplane inspections of contractor's compliance with such requirements.

Continued development or revisions in design of approved equipment, for the purpose of eliminating unsatisfactory conditions reported by the Service, is also a duty.

The following represents an interesting list of nonconfidential armament projects:

Determination of limiting dimensional characteristics and other installation conditions for turrets or inclosed cockpits in which flexibly mounted guns are used.

Revisions in design of existing bomb racks and control mechanisms for the purpose of incorporating a unit by means of which bombs may be released at regular time intervals, thus producing a controllable spacing on the ground of bombs successively released.

Investigation of revisions necessary in fixed gun installations to increase the number of bullets that can be fired against an objective within a given time interval for the purpose of compensating for the increased ground speed of modern attack type airplanes.

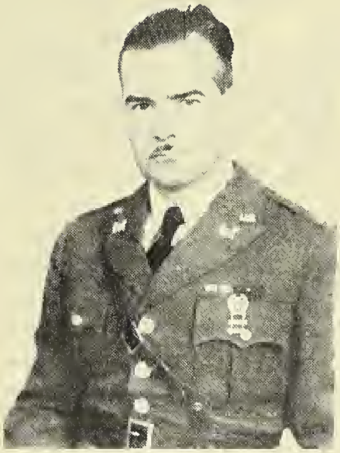
Installation for experimental test of 37 mm. cannon in the nose of the twin-engine attack airplane.

"To my way of thinking—and the observation is based on first hand experience as a correspondent in Europe in 1914 and again in 1917-18 —that nation which is best equipped in the aviation arm has provided itself with the surest possible guaranty of peace for the future. If we hold the air, the earth and the sea and the coast lines will be protected."

—Irvin S Cobb

Activities of the Engineer Detachment

Captain L J Rumaggi, Chief



Captain B B Talley

This DETACHMENT, consisting of two officers, five civilian employees, and five enlisted men, is concerned with the development of rapid and economical map-making methods. In all projects, photographs obtained with Air Corps cameras of both single and multiple-lens types, supply the basic topographic information.

Two general methods are employed in transforming the topographic information contained in the photographs into map data. Graphical methods, (radial line triangulation) principally are followed in compiling all planimetric maps (those on which no relief is delineated). In topographic maps, (those showing relief) stereoscopic methods and machines are used. The Detachment is equipped with an aerocartograph and three different types of multiplex aeroprojectors. Both these appliances permit the operator to draw topographic maps direct from information contained in the individual photographs. In the aerocartograph, transparent positive plates, like in size to the aerial negative, are used and in the multiplex projector small transparent positive reductions of the aerial negatives are employed.

With this equipment the Detachment has completed within the past year two of the regulation fifteen-minute quadrangle map sheets of portions of the Olympic peninsula in Washington, five reservoir sites along a proposed Lake Erie-Ohio River canal, and in addition carried out an experimental program of military mapping of Fort Bragg military reservation.

Because the basic information is obtained from aerial photographs the Engineer Detachment assists the Aerial Photographic Unit in tests of new or experimental types of cameras and accessories. The Detachment assisted the Air Corps in photography with tandem five-lens cameras for the Second Army maneuvers of this past summer and those of the Fourth Army to take place next year. In addition, the nine-lens camera of the Coast Survey is being tested.

FRANKIE AND JOHNNY

According to Hoyle, air is made up of a proportion of gases including some oxygen, some hydrogen, some nitrogen, and a few other minor and lesser elements. Suppose we take a couple of particles of air drifting lazily along with the breeze. Let's call them Frankie and Johnny, Pete and Repeat, Amos and Andy, or what have you!

For the sake of conversation Frankie asks Johnny what that fast-moving thing is coming up in the distance. Johnny says, "Why that's a PB-2A — we better duck. I remember getting sucked into a Hiso back in 1919 and I was really battered around."

Before anything could happen — biff! The prop hit them and Frankie allowed as how they were being given the bum's rush at Clancy's dance hall. Before regaining their feet as they bounced along the engine cowling, Frankie had lost the feather from her new hat and Johnny his favorite pipe. Swish, and they whisked through a screen wire netting, down into an intake pipe, and lo and behold — Johnny sees his first turbo-driven impeller. Frankie by this time was suspicious and asked Johnny, "Am I crazy, or is that thing really going round and round?" Johnny did not have time to answer because a blade clipped him from the rear and smacked him on into darkness, down through what he thought must be a crowded sewer pipe terribly cramped for space, and a lot warmer. By the time he had emerged from this long ride he was a little cooler and off in the distance somewhere he heard Frankie giving someone the devil for pushing her around. Fate bounced them together again and Frankie swore that, intercooler or no intercooler, she hadn't been pushed around so much since that subway ride after her last Army-Navy game. Johnny could feel the black and blue places beginning to form but wouldn't admit it to the weaker sex. The crowd wouldn't stop moving. On it went till a hissing noise was heard. Frankie said, "Enough is enough — I don't mind being pushed around in a crowd but that hissing noise sounds like a Bronx cheer from the boys over at the gas house."

Right she was, but it was too late to turn back. This joint had no side exits. A big Swede by the name of Throttle Valve seemed to be the doorman and somehow managed to mix the gas house gang in with the air crowd. About one palooka seemed to be with every fifteen of the air crowd. A flash of light in the distance was an indication to this gang that a party of some kind was about to take place. Frankie snuggled a little closer to Johnny cause she saw by the look in the eye of that guy from the gas house gang that he was in this party for no good. Trouble was brewing!

Another flash and the crowd tumbled down into a deep well whose bottom seemed to fall, give them a shaking up, and then the well suddenly decided to squeeze everybody up to the top. It was as hot and stuffy as the corner pool room. All of a sudden a couple of lightning flashes took place and then hell broke loose. The darkened place immediately made the Chicago fire look small, and was Frankie's face red! Fire was everywhere. A big Irishman flatfoot by the name of Exhaust Valve acted as the bouncer and, without ceremony, kicked the crowd out into a flaming hot alley, and around several corners. By this time everyone was in a mood to smack the first thing handy. Frankie and Johnny saw a couple of department store revolving doors that turned out to be turbine buckets with a sign on them that said PUSH! They did, and were immediately thrown out into the sunlight again. Johnny was glad that somebody, years ago, had decided that matter could neither be created nor destroyed and explained this to Frankie, but Frankie somehow doubted if she would ever be the same.

MATERIEL DIVISION ORGANIZATION

(Continued from page 2)

the direction of a Medical Corps officer has been added as a Unit.

Under the jurisdiction of the Field Service Section five main supply depots operate. These are situated at Fairfield, Ohio; Middletown, Pennsylvania; San Antonio, Texas; Belleville, Illinois; Coronado, California.

The Procurement Section controls district inspection offices throughout the United States and has jurisdiction over officers who serve as Air Corps Representatives at aircraft plants.

The Industrial War Plans Section operates six district offices located in New York, Buffalo, Wright Field (Cleveland Office), Detroit, Chicago, and Los Angeles.

"Transportation and communication are the fundamentals in the economic development of a nation. They are also prime indicators of a nation's ability to meet a national emergency. The airplane is to transportation of the future, what radio is to communication now and in years to come."

General J G Harbord,
Radio Corporation of America.

PROCUREMENT SECTION

(Continued from page 4)

broad and varied legal rulings which demand strict interpretation.

The INSPECTION BRANCH consists of one officer and approximately fifty civilian employees who are stationed at the Materiel Division for the purpose of controlling and co-ordinating inspection requirements. These requirements also cover by various laws and regulations, applicable not only to supplies sent to the Materiel Division for inspection and acceptance, but also those sent to the Field. This field inspection force consists of six officers who are designated as Air Corps Representatives and are stationed at the airplane contractors' plants, together with approximately 110 civilian employees, some of whom are stationed at airplane and airplane-and-engine factories, the others being scattered throughout the country in strategic points where they may be moved from one city to another in order to make the necessary inspection of supplies as they are contracted for.

FIELD SERVICE SECTION

(Continued from page 5)

Other functions include the preparation of data for the Budget Office to support annual appropriations; maintenance of liaison with the Office, Chief of Air Corps with respect to depot buildings and grounds projects; maintenance of records of allotment of aircraft to stations; and the necessary control over air transport squadrons assigned to Air Corps depots incident to the proper flow of supplies in the Air Corps.

THE BUDGET OFFICE

(Continued from page 7)

accounting for Air Corps property and recording activity of the aircraft may be seen from the fact that there are annually approximately 1,400,000 postings on Air Corps stock record accounts, and approximately 500,000 airplane flights made. Current Budgets are totaling approximately $60,000,000.

Since the Budget Estimate is prepared nearly two years in advance of the actual expenditure of the funds appropriated, many changes in conditions and equipment inevitably compel readjustment in the setup of funds by project from that originally established in the Budget Estimate. The relative needs of each project and each department concerned are given full consideration but the final decision involving transfer of funds from one project to another obviously can only be made by one individual, who is logically the Budget Officer, who functions in an executive capacity for the Chief of the Division in all Budgetary matters.

Jurisdiction over accounting in the Air Corps includes the auditing of contracts with commercial organizations whereby the Air Corps obtains reasonable assurance of fair return for its expenditures of money.

In brief, the functions of the Budget Office may be roughly divided into two categories: first, the preparation of the Budget including the control of the sources of information required therein; second, the administration of the Budget including the control over the expenditure of the appropriated funds and the auditing of Air Corps contracts incidental thereto.

INDUSTRIAL WAR PLANS SECTION

(Continued from page 6)

satisfactorily, attention is given to studies for those contributory items and materials which, it is estimated, might be difficult to procure in the time and quantity required. Many raw materials enter into this class of items as well as aircraft hardware, cable, tie rods, valves, springs, crankshafts, machine tools, etc. Among the plans which have already been submitted to the Office, Assistant Secretary of War and approved, are items of permanent mold pistons, tie rods, cordage, engine valves, and valve springs.

Reserve Activities

An important activity of the Industrial War Plans Section is the selection and training of the Reserve Officers necessary to the proper wartime functioning of the Air Corps procurement organization. This wartime organization requires, in addition to the Regular Army and civilian personnel, a total of 477 Reserve Officers, of whom sixty per cent (286), according to the present War Department policy, are selected and trained during peace.

"The conquest of the air is America's gift to the progress of the twentieth century. We owe it to ourselves to lead the development of aviation both into efficiency and usefulness and also to lead in surrounding this new agency with such moral restraints that nations will agree not to capitalize its destructive possibilities."

—Newton D Baker

AIRCRAFT RADIO LABORATORY

Colonel J O Mauborgne
Chief

DEVELOPMENT PROGRESS IN THE AIRCRAFT RADIO LABORATORY

Notable among the new equipment being procured are two complete interphone systems, one for two-place, and one for multi-place airplanes; a short-range liaison set, the SCR-238, which will replace both the SCR-134 and SCR-185 sets; and an improved long-range liaison set (SCR-187-A) which will be used in place of the present SCR-187 set in new aircraft. One of the most interesting, as well as important items of equipment recently developed, is the throat microphone, now being procured to replace the T-17 hand microphone. This microphone will fill a long-felt want for use at high altitudes and will allow the pilot or operator free use of his hands for other purposes while operating his radio equipment. While development work of direct current communication equipment may be said to be completed, improvements are continuously being investigated and adopted, where advisable. In line with the projected use of alternating current power supply in large aircraft, alternating current transmitting and receiving equipment for both 800- and 360-cycle current have been developed with a view to determining the trend of such equipment for future use.

In the Air Navigation field, development work has continued on the problem of furnishing a satisfactory radio compass, and with this end in view, two models have been procured. The SCR-AA-186 and SCR-AB-186 sets, which are modifications of the old Type E-4 and differ only in the type of receiver furnished, have already been delivered to the Service, while the SCR-242, which combines the best principles of the art known today, will be available for delivery during the spring of 1937. Work is being carried on to further improve this equipment by furnishing smaller loops in streamline housings, if it proves practicable. Progress has been made in the development of a simple, light-weight direction finder or homing device which can be installed in pursuit airplanes. Tests of a loop wound around the engine cowl have given great promise.

The equipment contained in instrument landing trucks has been improved from time to time, and at present, development work is being pushed to revamp the major portion of this equipment. New marker beacon projector and receptor equipment have already been service tested and are ready for procurement as needed.

A radio range marker for indicating the position of radio range stations provides a more positive indication than the cone of silence and will operate the present type of marker beacon receptor.

Several interesting problems, such as the control of the direction of flight by means of a radio compass and an automatic pilot, and the automatic selection of frequency settings on the radio compass by the action of the marker beacon receptor have reached laboratory solutions, and with slight modifications in the present laboratory designs, should be ready for procurement shortly, if needed.

In this same connection, aid was given the Instrument and Navigation Unit in the development of a training device to be installed in airplanes to simulate blind landing procedure.

The foregoing developments indicate that it will be but a short time until all airplanes will be equipped with efficient and satisfactory radio equipment for all purposes.

Other interesting problems too numerous to mention here, including ultra high-frequency work, are being carried on or will be set up in the development program for the next few years.

T W A "Overweather" Plane

D W Tomlinson and James Hiestand of T W A, Inc., arrived at Wright Field on December 8th in a Northrop fitted up as a flying laboratory for the purpose of engaging with the officers and engineers of Wright Field in experimental substratosphere work. The Materiel Division has been following such a project for some time, convinced that both for commercial and military purposes it will prove a most important development. It is anticipated that they will remain some time at the Materiel Division to complete the testing they have planned.

In flying to Dayton, Tomlinson's average speed from Kansas City in a climb to Columbia, Missouri, was 170 m.p.h.; from Columbia to St. Louis it was 247 m.p.h.; and from St. Louis to Indianapolis it was 251 m.p.h. Between Indianapolis and Dayton, where a descent was made from 30,000 feet, the average was but 213 m.p.h. because of hindering head winds.

W A Reeves, turbo-supercharger expert of General Electric Company, accompanied Tomlinson and Hiestand.

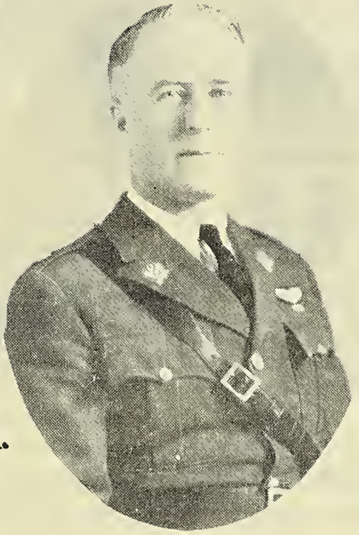
Kellett Autogiro

After a series of tests performed at the Materiel Division the Kellett autogiro was flown to Fort Sill, Oklahoma, by Lieutenant Nichols where it will be used in experimental work in connection with spotting artillery fire.

ARMY AERONAUTICAL MUSEUM

Although the ARMY AERONAUTICAL MUSEUM Building has housed the Museum, Technical Data Units, and Air Corps Engineering School for more than a year, personnel still enjoy its newness and beauty. It is, in fact, a satisfaction not only to those at Wright Field, but to an average of 140 visitors a day, to whom it is one of the principal points of interest on a tour of the Materiel Division.

Major W J Hanlon is the Director of the Museum and Chief of the various units which function under the Technical Data Branch. This Branch consists of the Library, Editorial, Motion Picture, Photographic, and Statistical Units.



Major W J Hanlon
Chief

Museum

The main Exhibits Hall measures 115 by 141 feet and contains thousands of items gathered through the life of the Air Corps and collected through the past seven years at the Materiel Division for museum purposes. When the sun streams warmly through the high windows and skylights, it seems to show, not items belonging to a quaint past, but valid links in a triumphant chain of progress. Patent seekers may learn what has already been accomplished along their lines, designers may compare contemplated details with what has gone before, and students may visualize the many amazing engineering strides taken in the brief life of the airplane.

We cannot attempt to name even groups of exhibits. In the spring, suitable items were prepared for the Government display at the Great Lakes Exposition at Cleveland. Among these were modern sectionalized aircraft engines, latest military aircraft types (full-size and models), aerial photographic equipment, modern and obsolete aircraft parts, flying clothing, the propeller of the first military airplane, motion pictures presenting Air Corps activities, both current and historical. This display attracted 2,800,000 clocked visitors in four months.

Among interesting exhibits acquired during 1936 are the command DH-4 piloted by Captain St. Clair Streett in the Alaskan flight of 1920; the Bird of Paradise (Fokker monoplane), first airplane to cross the Pacific to Hawaii; "Stumpy John Silver," World War carrier pigeon who served in the trenches, survived them, and concluded a comfortable veteran's life in Hawaii; a diorama depicting an airplane making a blind landing on a strange landing field. Improved methods of display and new display cases came into being during the year. It is believed that the Museum will increasingly become a Mecca for the aeronautically minded who will find in it information of interest and value.

Museum Rotunda

Materiel Division Library

Wright Field officers and civilian engineers haunt this pleasant room for purposes of reading, study, and research. During 1935, approximately 400 technical volumes were added to the 8,000 already on the shelves. The capacity is 32,000 volumes. About 3,000 documents came to the files which contain at the present time approximately 60,000. Distribution for the year amounted to 12,400 documents, books, and magazines. Historically, and as a working aid in aeronautics, the importance of these documents cannot be overestimated and they are drawn upon freely not only by Government organizations but by designers and engineers of the Industry. Preserved in a fire and burglarproof room, they tell the story of airplane development in their detailed accounts of experiments and tests.

Editorial Unit

The outstanding accomplishment of this Unit for 1936 was the editing, compiling, and publication of a completely new edition (the Eighth) of the Handbook of Instructions for Airplane Designers, a two-volume document

8-1/2 by 11 inches in size, containing 560 pages and 233 illustrations. This book forms a basis of 1938 airplane procurement. Besides this, the Technical Data Digest, a 48-page mimeographed magazine, giving abstracts of aeronautical articles from current publications, was published twice each month. Forty translations from French and German, consisting of from 3 to 34 pages in length, were made. Daily press contacts, preparation of special news and feature articles, lecture arrangements and preparation of lecture data, and Air Corps News Letter contributions were also among the projects of this Unit.

Photographic Unit

This Unit covers the general ground photographic assignments incident to the duties of a large experimental establishment. These include portraits of military personnel, of important experimental projects, and of all new airplanes. Lantern slides, photostats, photographic enlargements, and opal transparencies of late airplanes to be used in display cabinets were also made. During 1936 approximately 24,000 photostats and 19,000 prints were turned out.

Motion Picture Unit

This Unit takes motion pictures and prepares them for historical, technical, training, record, and educational purposes. Sound recording has formed part of this program for the past year and a half.

There is a definite need for motion picture equipment in the Air Corps. No better means of instruction by illustration, for instance, of the operation of an air unit engaged in a mission of attack, from airdrome to objective and return, can be visualized than with the sound motion picture. The utilization of the so-called animated cartoon may also have application. There is also need for motion picture photography in the study of behavior and causes of failure of materiel. Slow motion picture studies of wing flutter, propeller vibration, bomb release mechanisms, and many other aeronautical research problems are considered extremely valuable.

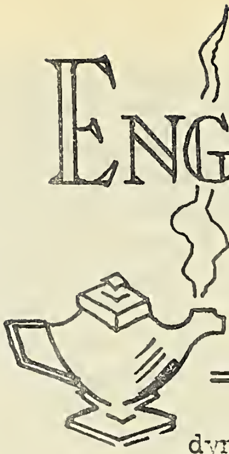
Sound recording is being added to instructional film on the inspection of the A-17 airplane, the photography of which was accomplished at Chanute Field. Approximately 12,000 ft. of film was copied during 1936 for the Office, Chief of Air Corps.

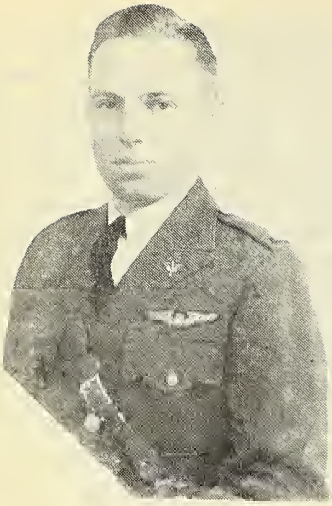
Statistical Unit

One of the most important functions of this Unit is the compilation of charts and data presenting the characteristics of aviation engines and airplanes, foreign and domestic, military and commercial, in order that this information may be disseminated properly throughout the Service. Other charts, photographic layouts, special maps, and drawings are also prepared for various purposes.

This Unit keeps on file the originals of Air Corps Technical, Service, Translation, and other Reports for reproduction, and also distributes them. By the collection of newspaper clippings and general statistical data this office serves as a source of general statistical information to the Materiel Division. Distribution of the Handbook of Instructions for Airplane Designers with revisions, Air Corps Information Circulars, Air Corps and Navy News Letters, and Miscellaneous Naval Reports received from Washington are distributed. Much of the information received in this Unit is of confidential nature and must be accordingly guarded.

ENGINEERING SCHOOL





Lt. R P Swofford, Jr.
Assistant Commandant

The Air School of Application, later designated the AIR CORPS ENGINEERING SCHOOL, was established in November, 1919. This School was the result of the growing realization of the need for a group of Air Corps officers well grounded in aeronautical engineering. A total of one-hundred and eighty-eight officers will have completed the course of instruction with the graduation of the 1936-37 class.

The scope of the curriculum has been changed many times in an effort to keep abreast of the rapid technical progress in Air Corps equipment. It becomes increasingly difficult to cover properly all the essential subjects in the allotted time of one year. It should be remembered, however, that the School is not trying to produce highly trained and specialized engineers in certain particular phases of aeronautical engineering, but to give to officers the sound and general engineering background that will aid them in the performance of duty with the Materiel Division and future service in the Air Corps.

Curriculum

The curriculum may be roughly divided into two parts. Approximately one-half of the time is spent in the study of the fundamental and theoretical engineering subjects such as aerodynamics, airplane stress analysis, propeller theory and design, etc. And one-half is devoted to the practical aspects of engineering as encountered within the Materiel Division proper and the Air Corps Depots. This latter work is performed within the various Materiel Division laboratories, shops, and units, and is under the direction of the highly qualified specialists who are in charge of the various units. This practical work includes such courses as engine laboratory tests, wind tunnel research, flight tests, etc., and stresses Materiel Division procedures, methods, and problems.

A further idea of the scope of the work at the Air Corps Engineering School may be obtained from a general comparison with the five-year course in aeronautical engineering given by any recognized civilian institution. While the theoretical subjects cannot be covered with the degree of thoroughness that is attained in a college or university, yet each professional subject included in the fourth and fifth year in aeronautical engineering at a university is well covered during the year at the Engineering School. Furthermore, in the field of practical engineering the School is in a truly unique position due to its close proximity to the Materiel Division. The laboratory work is performed upon the very latest types of Air Corps equipment and in laboratories equipped for every type and kind of test. The instructors in this work are experts in their particular fields.

Postgraduate Courses

At the present time three graduates of the Air Corps Engineering School are sent each year to take postgraduate work at certain civilian institutions recognized as outstanding in the fields of aeronautical or power plant engineering. Officers are chosen for this detail from those who desire the postgraduate work and are well qualified to complete it satisfactorily. For these individuals the year at the Air Corps Engineering School furnishes a review of fundamentals, a general background in the entire field of aeronautical engineering, and a familiarity with Air Corps methods and problems that is of inestimable value, both to the officer himself in the pursuit of his work at the university and to the Air Corps in the future work of the officer in his chosen speciality.

Applications

Application to attend the Air Corps Engineering School must be made by letter to The Adjutant General, through channels. The applicant is furnished a questionnaire, which, when completed,gives a synopsis of his service and education. These papers are forwarded to the Faculty Board of the Air Corps Engineering School for recommendation as to whether or not the applicant is eligible for attendance at the School. The minimum technical and educational requirements are that the applicant be a graduate of a recognized technical college, a graduate of the Military or Naval Academy, or that the applicant prove to the satisfaction of the Faculty Board that he has sufficient knowledge of the fundamental sciences of calculus, chemistry, physics, mechanics, and drawing to warrant his attendance at the Engineering School. The class of approximately ten students is detailed each year from the officers upon the eligible list.

Visitors Invited

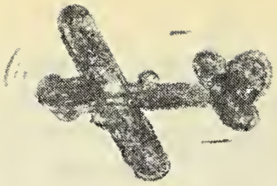
It is believed that there is comparatively little knowledge among Air Corps officers as a whole as to exactly what is accomplished at the Air Corps Engineering School or the real purpose behind the School. Therefore, this opportunity is chosen to invite any officer who may stop in at Wright or Patterson Fields with an hour or so on his hands, to visit the School, get an idea of what it is all about, and ask any questions concerning the School which he may have in mind.

Anniversary of First Flight

The 33rd anniversary of the first flight was celebrated in Dayton with special significance this year as it marked the inclusion of Dayton on the commercial air map by the inauguration of regular air mail, passenger, and express service for Dayton by both the T W A and American lines.

The usual pilgrimage of the N A C A to the home of Orville Wright and the placing of a wreath on the grave of Wilbur Wright by Brigadier General A W Robins was observed. In the afternoon members of the N A C A visited Wright Field.

Sand from the dunes of Kitty Hawk, North Carolina, where the first airplane took off on December 17, 1903 will be used in christening the new T W A airplane, "City of Dayton." The sand arrived in a bag sewed by Mrs. Tate, wife of Captain Tate of Kitty Hawk who witnessed the first flight, on the same sewing machine used by the Wright Brothers for stitching fabric for their early experiments.



Flying Branch

Capt. S M Umstead
Chief

From the inside, the FLYING BRANCH is a routine workaday affair wherein an airplane is flown to check the r.p.m., manifold pressure, and carburetor ram pressure with a flat wire screen installed in the scoop, or a cooling test as required by E.O. 3759-10 is obtained by the test pilot and observer.

To the outsider it is a laboratory whose roof is the sky, whose walls are all out-of-doors, whose workers are pilots and observers of sound and quick judgment, knowing all that is to be known of the operations of a form of craft still new and radical enough to hold romance.

Actually the Flying Branch is made up of Units of workers as are the other Branches on the field. There are the test pilots headed by Capt. S M Umstead, who is also Branch Chief. The others are Capt. G J Eppright, Capt. S R Harris, Capt. F G Irvin, and Capt. C W O'Connor.

The FLIGHT TEST COMPUTATION UNIT, headed by E L Pratt, designates the method required and the data to be obtained in flight testing of the different airplanes or equipment, and computes results obtained in logical report order.

It also has charge of the installation and calibration of special flight testing equipment and in some cases designs new test instruments to obtain the test information desired. Because of the many new airplanes entered in competitions during the past year, the activities of this Unit have been especially accelerated. There is a PLANES & ENGINES MAINTENANCE UNIT, whose function is to inspect, maintain, and prepare the airplanes in the various hangars for incidental or test flying.

The "OPERATIONS OFFICE" is a self-explanatory term on all airdromes. There is a METEOROLOGICAL OFFICE under Capt. Benjamin Stern of the Signal Corps; and in addition, a RADIO TRANSMITTING AND RECORDING STATION identified by the call letters P E-2 and equipped with a long and a short-wave transmitter. In certain tests this radio is used to obtain flight test data.

Each morning at four, winter and summer, good weather and bad, a pilot goes aloft to 17,000 feet for the purpose of obtaining weather data, Wright Field being one of a series of stations throughout the country designated for obtaining such information for the U.S. Weather Bureau.

Besides the hangars and those offices at which men work at desks there is a laboratory where special test instruments such as barographs, tachometers, altimeters, air-speed indicators, and thermometers are calibrated before and after test flights; a room for storing equipment temporarily removed from an airplane while special equipment put on in its place is being tested, and where airplane flares are kept handy for night flying; a ballast room, where sand bags, dummy guns, and dummy flares used in weight-carrying tests are ever ready for loading and installing on airplanes under test.

The standard performance test for airplanes has certain basic phases which have not changed greatly during the years. Among them are the power calibration test and calibration of the air-speed indicator, determination of official high speed and operating speed at any altitude, the saw-tooth climb,the check climb, the engine-cooling tests, carbon monoxide tests, the oscillation tests, pilot's preliminary and final observations, and for some airplanes the spinning tests. The latter usually call for anti-spinning devices in the way of releasable ballast or a small parachute attached to the tail of the airplane for the purpose of stopping rotation should the pilot be unable to bring the airplane out of the spin by means of the controls.

None of these tests with the high-powered craft of today is without an element of danger. Therefore, today as always, flight testing of new and experimental engines and airplanes requires courage, cool judgment, and careful, precise flying, all of which qualities are sought in the selection of service pilots for test flying.

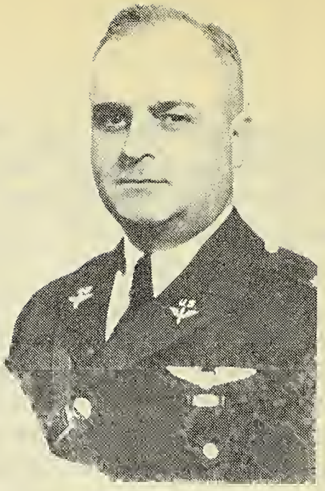
During 1936 four initiates entered the Caterpillar Club from the Flying Branch. W W Cummings, H D McDaniels, and John Cutting were ordered to jump from the C-33 on July 22nd, when one of the motors caught fire in the air. Mr. Hobson of Chanute Field and Mr. Wetherford of Middletown Air Depot being in the cabin also jumped. All five men landed safely, as incidentally did the airplane, Captains Frank Irvin and J D Griffith succeeding in extinguishing the flames and bringing the airplane in safely.

Capt. Charles O'Connor was the fifth "Caterpillar" being forced to jump in the cold gray dawn of a weather flight on October 27th near Dayton. The plane went into a spin at 12,000 feet from which it could not be extricated and at 5,500 feet Captain O'Connor took French leave. All will undoubtedly dub it one of their lucky years with the parachute acting as a real Santa Claus.

A seventh Caterpillar initiate was J L Malone, civilian test pilot, who was spin-testing a plane entered at Wright Field for consideration as a trainer. He jumped near the Field at 800 feet when the airplane could not be brought out of a spin.

The flying field at Wright Field is well adapted for flight test purposes. It is generally triangular in shape, covers 520 acres, and has a landing area approximately one mile each way. Three hangars of concrete and steel construction have a total capacity for 75 airplanes.

MAINTENANCE BRANCH



Lt. Colonel F W Wright

The present MAINTENANCE BUILDINGS AND GROUNDS BRANCH of the Materiel Division was organized during the World War at McCook Field and was known as the Construction Department. After hostilities ceased and McCook Field became the Engineering Division, the Construction Department acquired the title it now holds.

In 1923, it was decided that the Engineering Division had outgrown its quarters both in landing field area and building floor space. As a result the Architectural Unit and the Maintenance Buildings and Grounds Branch in co-operation with Lt. Colonel Frank W. Wright, at that time Chief of Buildings and Grounds of the Air Service, and the Dayton Air Service Committee, which was organized for the purpose, promoted the relocation of the Engineering Division by the use of charts, graphs, a large relief map, and photographs. Shortly after the War Department accepted the new location for the Engineering Division (now the Materiel Division, Wright Field), the Maintenance Buildings and Grounds Branch was allotted the first increment of funds to begin the preparation of the site.

In the spring of 1926, the removal of fences, trees, and other obstructions, and the rough grading of the landing field were started. Several caterpillar tractors and wheeled scrapers were acquired and these were made up into trains with which to move the dirt.

The preliminary layouts of the Field as well as the designs for the buildings had been prepared by the Maintenance Branch, Architectural Unit, and turned over to the Quartermaster General.

Throughout the course of construction, it was the function of the Maintenance Buildings and Grounds Branch, in order to co-ordinate the activities of the various branches with the Constructing Quartermaster to insure that Materiel Division requirements were met.

A majority of the buildings were contracted for by the Constructing Quartermaster. The Maintenance and Grounds Branch, however, installed the steel framework of the buildings, constructed from overseas hangar steel, and the utilities.

As the structures took shape, the stupendous task of moving the Engineering Division was delegated to the Maintenance Buildings and Grounds Branch. This was accomplished with a minimum of delay and confusion considering the great variety of equipment handled and the miscellaneous details connected with dismantling and re-establishment of the huge experimental plant. This was effected under the direct supervision of Major (now Lieutenant Colonel) J. H. Rudolph.

After the establishment had been completed, Lt. Colonel Wright was assigned to Wright Field as Chief of Maintenance Buildings and Grounds Branch, and under his direction the problem of landscaping and beautification of the Post reached definite success.

At the time of his coming, a majority of the buildings were covered with temporary siding and roofs in the form of corrugated iron sheets. Since that period all, with the exception of five, have been changed to permanent coverings.

The decorative entrance to the Field was a design of the Maintenance and Grounds Branch, selected by competition which was also responsible for its construction.

Of the total amount of funds alotted for the construction and re-establishment, the Maintenance Buildings and Grounds Branch has expended approximately $2,000,000 or 30 per cent.

With the advent of the P W A, approximately 600 relief workers were supervised by the personnel of the Maintenance Buildings and Grounds Branch under the direction of Colonel Wright. All manner of projects were accomplished with these workers, including grading of the field, temporary roads, and improvement to grounds in general.

With the allotment of P W A funds three buildings, the Army Aeronautical Museum, Heating Plant Addition, and Static Test Laboratory, were approved for construction. The preliminary drawings and designs were prepared in the Maintenance and turned over to local architects for completion, the coordination between all agencies being handled under Colonel Wright's direction.

The MAINTENANCE BRANCH as now organized includes the Plant Protection Units and contains 141 capable workmen, each skilled in his particular line. The Branch is divided into the following Units: Administrative, Boiler House, Carpenter, Electrical, Fire Protection, Guard Protection, Janitor, Labor, Millwright, Mobile Machine Repair, Painting, Rigger, Sheet Metal, and Steam Fitting.

The duties of this organization are: the maintenance, drainage, and repair of lawns, grounds, roads, walks, and flying fields; supervising of all heating, lighting, power, gas, water, and sewer systems; the maintenance of buildings and installations, other than special technical installations pertaining to the technical work of the Materiel Division; the erection of such buildings as are authorized; inspection of the above to obviate malfunctioning; and the rendering of frequent reports to the Commanding Officer of the condition in which facilities are found. Fire protection, police protection, and janitor service are also functions of this Branch.

Of the 141 employees, forty-seven have served from 15 to 20 years with the Materiel Division, and fifteen have served from 10 to 15 years.

Automatic Pilot School

A class for instruction in the maintenance and operation of the automatic pilot convened on December 2nd with W W Cummings, engineer, of the Equipment Branch as instructor. Enlisted men from Bolling, Patterson, Langley, Mitchel, Selfridge, Kelly, Barksdale, and Wright Fields were in attendance.

Upon the completion of the course, these students will return to their fields to act as instructors to others who work with automatic pilots. The course is a thorough one, including both flying and ground phases of the care and operation of this important equipment.

HONORS AND AWARDS

During 1936 the Materiel Division had reason to be gratified by honors which came to various members of its staff for the performance of deeds of valor, notable flights, or outstanding contributions to science.

Lt. R K Giovannoli received (posthumously) in 1936 the Cheney Award for 1935. His gallant rescue of Major Hill and Leslie Tower who were trapped in a burning bomber is too well known to need recalling. Besides this, for the same acts of bravery, Giovannoli and also Lt.L F Harman, who assisted in the rescue work, were awarded the Soldier's Medal by the War Department.

Capt. H G Armstrong, Medical Corps, in charge of the Physiological Research Laboratory, was awarded the Henry S Wellcome gold medal and a cash prize of $500.00 for the best paper submitted in a contest on "The Importance of Co-ordinating the Military and Naval Medical Services with the Civilian Medical Profession."

Major A W Stevens has received many acknowledgments of merit for his stratosphere flights. Among them in 1936 came the Oak Leaf Cluster, a distinguished flight award given to aviators who have already received the Distinguished Flying Cross.

A handsome bronze plaque, the gift of the Dayton Chamber of Commerce, was also added to this officer's gifts of merit.

Major Hez McClellan, who was killed in flight testing an airplane last May, was awarded the Distinguished Flying Cross (posthumously) in June, 1936 for his part in the 1935 flight of ten Army bombers from Washington to Alaska and return.

Capt. Frank G. Irvin was awarded the Distinguished Flying Cross on December 10th for courage and cool judgment shown in extinguishing the flames which broke out in one motor of a Douglas Transport and bringing the plane to a safe landing on Wright Field after ordering five civilian test observers to jump for their lives. Capt. J S Griffith, who was piloting the airplane with Captain Irvin and assumed all responsibility with him, was similarly awarded. Both were test pilots of the Flying Branch but Captain Griffith was transferred before the presentation of the award.

Captain Irvin is a member of the Caterpillar Club, having entered when he had been a Wright Field test pilot little more than a month. He was initiated when the spring mechanism of an experimental ski installation failed and sent the airplane into an uncontrollable dive. He was injured in landing.

Capt. B B Talley, Engineers Corps, of the Aerial Mapping Unit, received, upon authority granted by special act of Congress, the Nicaraguan Medal of Merit on August 4th. The Nicaraguan government conferred the medal for especially meritorious services to the Republic during the earthquake of 1931. At the time Captain Talley was in charge of an Engineers' Battalion making a survey of the Nicaraguan Canal.

Photographic Lamp Assembly

Action is being taken to standardize the Type C-1 lamp assembly for Air Corps photographic use. It consists of a parabolic reflector which has provisions for carrying either a No. 4 photoflood lamp, or two No. 2 photoflood lamps, mounted on a stand that permits adjustment from 4 to 8 ft. A suitable connecting cord and switch are provided for controlling the light. The carrying case is part of this equipment and houses two complete lamps in a knocked-down condition.

FIRST SYNTHETIC RUBBER BALLOON CONSTRUCTED

THE only balloon in the world constructed completely of synthetic rubber is the Army Observation Balloon, Type C-3, which is undergoing service test at Fort Sill, Oklahoma. Completed in April of this year, it represents another of the many answers to research problems which have had their initiation at the Materiel Division.

Rubber being a product procurable only by import, it has been for many years one of the aims of the Materiel Division to obtain for Air Corps use a synthetic compound which would adequately take its place. The Industry was scoured and dozens of samples tested in the Wright Field laboratories with but indifferent success. After several years a material was discovered which extensive testing proved not only equaled but surpassed the genuine rubber in every essential characteristic. This material was a commercial product known as "Duprene."

Experiments were started immediately in applying the compound to cotton fabric for the purpose of securing an adequate balloon fabric to supplant the genuine rubberized fabric. In the making of balloon fabric two plies of cloth laid at oblique angles are "doubled" or made homegeneous by interposing a layer of rubber. This method was not changed except that the synthetic rubber was substituted for the genuine. Extensive laboratory as well as exposure rack tests were conducted. Samples were exposed for eight months to the weather with monthly examinations to determine degree of depreciation as to strength and gas diffusion characteristics. At the end of eight months a slightly higher tensile strength than before was shown on the testing machine, and the gas escapage, which with rubberized cloth was from 15 to 19 liters per square meter, was but from 1 to 3 liters in 24 hours.

With these amazing results on samples to encourage them, Wright Field engineers determined that it would be well to try out the new fabric in a full-size observation balloon. Developed in conjunction with the Industry about 200 pounds of synthetic rubber compound were required. Even the cement and tape used in seams and for patching are of the same synthetic materials. In balloon structures seams must test out as strong as the fabric itself. Seam tests were carried out at high temperatures, as in the case of rubber, using synthetic cement. It was found that the performance of the seam was the same as that for rubber cement and was equal to the strength of the homogeneous material. This point was proved in testing many samples at elevated temperatures.

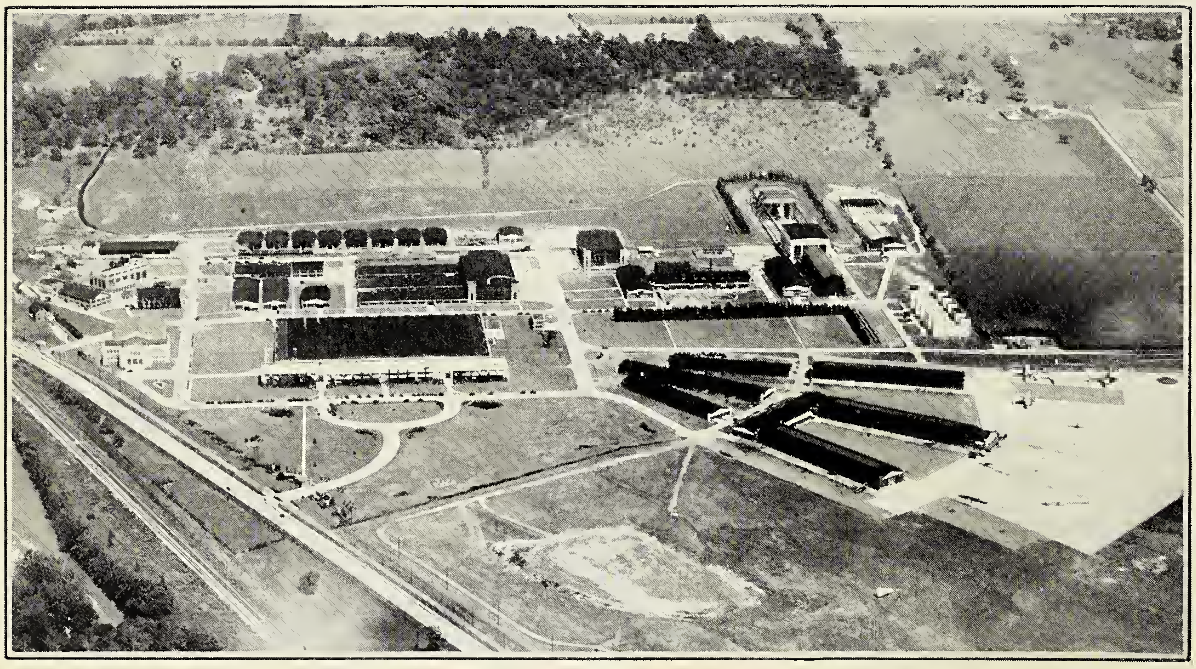
When the balloon was constructed, in lieu of a high temperature test, it was inflated with air and exposed to bright sunlight for two days before inflation with hydrogen. Instead of deterioration it was found that the seam strength had increased. In its service testing the C-3 observation balloon has been used in the Second Army Maneuvers in Michigan, been moved about the country otherwise, and shown excellent durability and gas-holding indications.

The life of a balloon constructed of genuine rubber is usually about one year. In the synthetic rubber balloon a definite and worthwhile increase in this period is anticipated.

This development has led to that of an all-purpose synthetic rubber-coated hose which is impervious to the deteriorating qualities of coolants, gasoline, oil, or other chemical solvents,

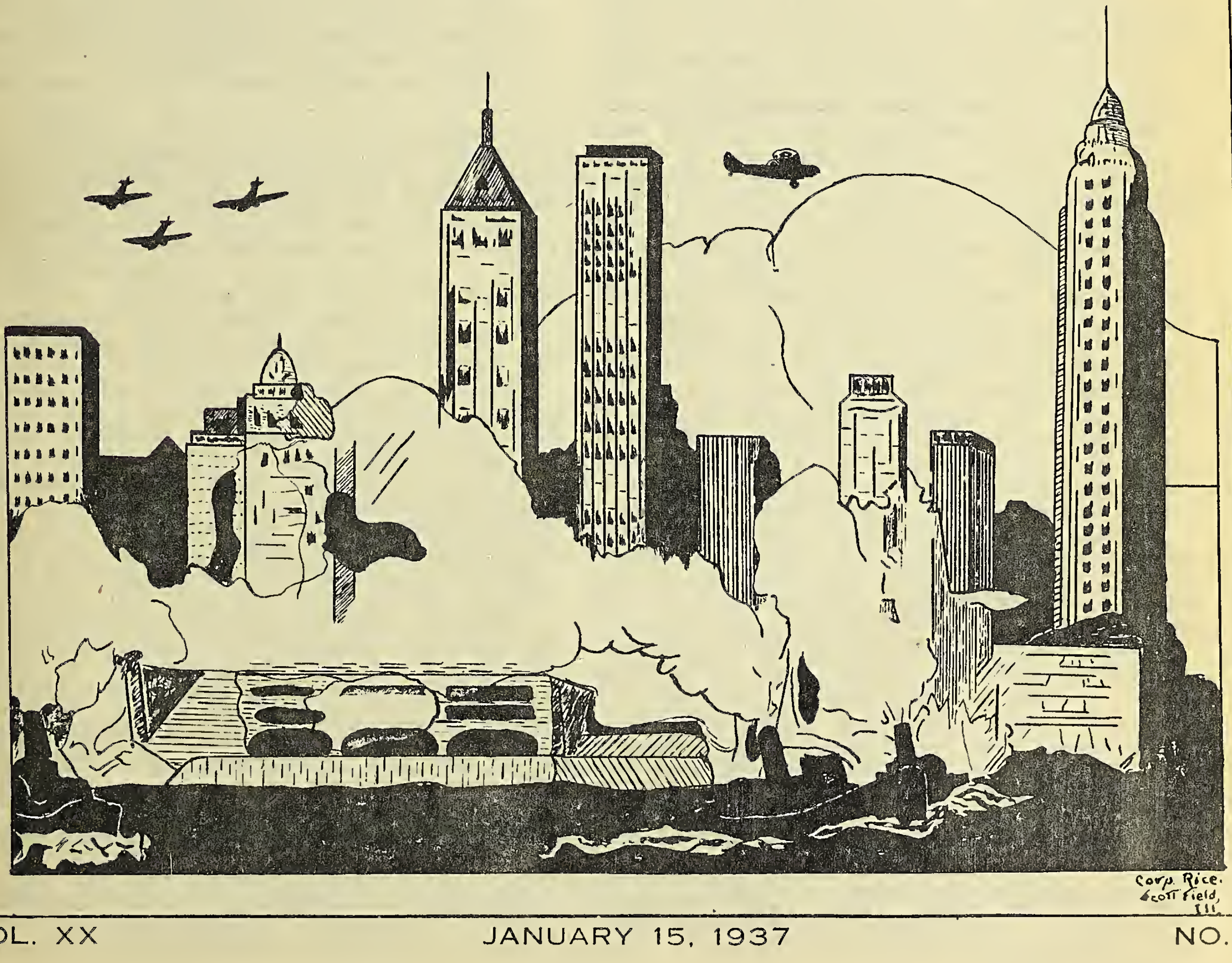
at any temperature encountered in practice.

When an experimental organization in search of a substitute finds one not only "just as good" but very decidedly better, it is a happy surprise indeed.



AERIAL VIEW OF WRIGHT FIELD

Air Corps News Letter



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VOL. XX JANUARY 15, 1937 NO. 2

NEWS LETTER

AIR CORPS
VOL. XX NO. 2
Information Division
Air Corps
January 15, 1937
Munitions Building
Washington, D.C.

The chief purpose of this publication is to distribute information on aeronautics to the flying personnel in the Regular Army, Reserve Corps, National Guard, and others connected with aviation.

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PROCUREMENT OF ARMY AIRCRAFT DURING 1936

The Secretary of War, Honorable Harry H. Woodring, announced recently that 506 airplanes had been delivered to the Army Air Corps by contractors during the calendar year 1936. This is the largest number of airplanes which has ever been delivered during any year since the adoption of modern all-metal construction. This simple statement of fact, however, by no means gives the whole story.

The cost of the airplanes necessary to equip a properly balanced air force of a given airplane strength has been increasing steadily ever since the War, and will probably continue to do so. This increase in cost has been due to four principal causes:

First, it costs more to build a large airplane than a small one.

Second, the proportion of Bombers (large airplanes) to Pursuit (small airplanes) has been increasing steadily from the proportion of about one Bombardment airplane to four Pursuit airplanes in 1926 to about 11 Bombardment airplanes to 9 Pursuit airplanes at the present time. The principal underlying reasons for this are that close Pursuit support of modern long-range Bombardment can no longer be provided clear to the target, and that the high speed and the great defensive fire power of modern Bombers make close support by large numbers of Pursuit airplanes no longer so vitally necessary as heretofore. Our Pursuit, which are thereby relieved of this defensive mission, become available for use in the defense of our own forces against the attack of hostile aircraft.

Third, since the World War there has been a progressive development from the wood-wire-fabric biplane through welded steel tubular construction to the modern riveted "dural" monoplane. To achieve the high performance required in modern aircraft necessitates meticulous care in the manufacture of many odd shapes, in order to attain the best streamlining, counter-sunk rivets and the elimination of every other possible impediment to smooth air flow. This all requires large expenditures for heavy machine tools and elaborate dies, jigs, fixtures, etc. - most of the latter equipment being useless on subsequent contracts.

To secure the maximum value from the large expenditure which the contractor has made for such equipment the Secretary of War has adopted the policy of letting large airplane contracts for delivery during a period of two years. The saving thereby effected is passed on to the Government, and he has thus been able to secure the maximum number of modern aircraft for the money expended.

Fourth, in addition to the cost, which is inherent in the construction of the airplane itself, the modern military airplane requires many instruments and much equipment scarcely thought of 15 years ago. For instance, at the close of the World War, a pilot who wanted on his instrument board more than a compass, altimeter, tachometer and water thermometer was considered just a little eccentric. Today, a modern two-engined military airplane may have over five times that number of instruments, controls, etc., costing over $5,000, and will also have flaps, brakes, complete radio equipment, and many other devices not in use on military aircraft of the post-war period.

For the money being expended today for modern Army aircraft the Government could buy almost twice as many planes of the models of 10 years ago, but the modern planes are many times more effective.

The same condition has occurred in building construction. For instance, a modern home with electric lights, gas-hot water furnace, three baths, asbestos insulations and air conditioning costs several times what the same size house would have cost our grandfathers, but we are more than willing to pay for the increased comfort provided by modern construction. Similarly, our modern Army aircraft, manned and maintained by an air force properly balanced in all its component parts are much more effective than a force of many times that number of obsolete aircraft.

Our aircraft designers are second to none. Our plane industry can and does build the best airplanes in the world today. It has been and will continue to be the policy of the Army to provide the Air Corps with the best equipment available - the amount of such equipment being limited to that procurable with appropriated funds.

For each dollar expended on Army aviation the country is getting a greater value in National Defense per dollar expended than ever before. It would be a great mistake to permit a craze for mere numbers to force us to accept less effective aircraft, although a greater number could be procured for the money.

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PURSUIT AVIATION

By the Langley Field Correspondent

There are in this country today three Pursuit Groups, the First, Eighth and Twentieth. All are a part of the General Headquarters Air Force. During the expansion of the Air Corps, the Eighth Pursuit Group was made an active operating unit and stationed at Langley Field, Va. It was composed of three fighting squadrons, a Headquarters Squadron and the administrative personnel who are designated as Group Headquarters Squadron. In addition to these, the 37th Attack Squadron has been attached for administrative purposes only. Since Attack tactics differ from Pursuit tactics, we will leave the explaining of Attack to those who are better qualified to explain it.

The three fighting units of the Group are designated as the 33rd, 35th and 36th Pursuit Squadrons. These Squadrons were first organized in the Spring of 1917, and were sent to France in the late summer. There they established and became an important part of the American Flying School at Issoudun. What is now the Headquarters Squadron was formed from the old 58th Service Squadron. This organization went to France in the spring of 1918, and was actually employed in three sectors at the front, namely; Lorraine, St. Mihiel and Meuse-Argonne.

Since its organization, the Eighth Pursuit Group has engaged in quite a number of maneuvers. The first of these was the Air Corps Command and Staff Exercises in California in 1933. Next came the gunnery exercises near Miami, Florida, in January, 1934. In the following January, the Group staged an aerial "war" throughout the 4th Corps Area, which is comprised of most of the Gulf and Southern Atlantic States. After a short breathing spell, the Group again moved into the field during the summer of 1935, using the National Guard airdrome at Virginia Beach as its base. Following this came the concentration of all units of the Second Wing at Langley Field. In February, 1936, some of the personnel from the Eighth Pursuit Group took part in the winter test operations in the New England States. This was a most severe test, carried on during a good old-fashioned New England winter. This past summer all Squadrons of the Group held field exercises at Virginia Beach.

At present the Eighth Pursuit Group is equipped with Curtiss P6-E's and Consolidated PB2-A's. The P6-E's are rather small, single-seater biplanes, powered with Curtiss "Conqueror" engines. This engine develops about 675 horsepower, and uses Prestone instead of water for the cooling liquid. The PB2-A's are a much later development. They are two-passenger, low wing monoplanes, powered with supercharged Curtiss "Conqueror" engines. Supercharging and certain other improvements have made these engines produce 700 horsepower.

All of the personnel, from the Group Commander down to the buck privates, are constantly working together to maintain efficiency and morale so that in the event of war they may fulfill the motto of the Eighth Pursuit Group - "Attack and Conquer."

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LANGLEY OFFICERS OBSERVE MIAMI AIR MEET

The Headquarters of the General Headquarters Air Force, Langley Field, Va., was represented at the All American Air Maneuvers by a delegation of four Langley Field officers headed by Major James P. Hodges, who flew to Miami, Fla., to act as observers at the Meet. Due to the rain and low ceilings which visited the eastern seaboard, hundreds of aircraft from all over the country were unable to reach Miami in time for the maneuvers. Hence the Arsenicker Ball, the military fete held annually for Air Corps officers, was attended by few honor guests. Colonel Hugh J. Knerr, Chief of Staff of the GHQ Air Force, then on leave at Miami, was elected Chief War Hawk at the ball. Incidentally, Major Hodges reported that Colonel Knerr was doing well with the rod and reel, recently hooking a 47-pound sail fish.

SECRETARY OF WAR PRESENTS D.F.C. TO GENERAL ARNOLD

For his achievement in leading a remarkably successful flight of ten Army airplanes from Washington, D.C., to Fairbanks, Alaska, and return, during the summer of 1934, Brigadier General Henry H. Arnold, Assistant Chief of the Air Corps, was presented on January 5th with the Distinguished Flying Cross. The presentation was made by the Hon. Harry H. Woodring, Secretary of War.

General Arnold is one of the Army's pioneer aviators and has to his credit many noteworthy aerial accomplishments. He has been flying for a quarter of a century and is still rated as one of the best of the country's military pilots. He is a native of Gladwyne, Panna., and a graduate of the United States Military Academy of the class of 1907. General Arnold received his first instruction as an aviator from Orville and Wilbur Wright, the inventors of the airplane.

In pinning the decoration on General Arnold, Mr. Woodring said:

"With great personal pleasure I wish to present to you in behalf of the President this Distinguished Flying Cross. This award is made by reason of your magnificent leadership in the great flight of ten Army airplanes to and from Alaska. However, it serves also to call attention to your long and brilliand record of flying achievements which began a quarter of a century ago and still continues.

As a pioneer aviator twenty-five years ago you were a contemporary of the Wright Brothers, Glenn Curtiss and others, whose inventions and experiments first conquered the air. Among your associates were many brilliant and daring flyers who long since have made the supreme sacrifice for the advancement of the science of flight. Among your early amazing achievements was a successful cross-country flight of a dozen miles that won for you the coveted Mackay Trophy. At that time this was a greater feat than a round-the-world flight would be today.

I am sure, General, that I speak not only for your associates in the Army, but also for all Americans, in congratulating you on this well deserved award and in expressing the hope that the country will continue to have your splendid service for many years."

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GENERAL PRATT BECOMES PERMANENT BRIGADIER GENERAL

By the Langley Field Correspondent

The first Army Air Corps officer to achieve the distinction of being appointed a permanent general officer of the line of the Army is Brigadier General Henry C. Pratt, commanding the Second Wing of the General Headquarters Air Force. General Pratt's appointment as a Brigadier General, with rank from January 1, 1937, was announced in War Department Special Orders of that date. He was assigned to duty with the Air Corps in his present position as Wing Commander, Second Wing, GHQ Air Force, Langley Field, Va.

This appointment of an Air Corps officer marks, in a general way, the coming of age of the Air Corps as an arm of the service to contain officers with sufficient service to be eligible for such appointment.

General Pratt was born at Fort Stanton, New Mexico, September 2, 1882. He was appointed to the United States Military Academy from Wisconsin on August 1,1900, and upon graduation on June 15, 1904, was appointed a second lieutenant of Cavalry. He was promoted to 1st Lieutenant on March 30, 1911; to Captain, July 1,1916; to Major, Regular Army, July 1, 1920; to Lieut. Colonel, June 20, 1928, and to Brigadier General, temporary, July 17, 1930. He was relieved from duty as Assistant Chief of the Air Corps on July 16, 1934, and reverted to his regular rank of Lieut. Colonel. On March 2,1935, he was again appointed Brigadier General, temporary.

General Pratt first served with the 4th Cavalry at Fort Leavenworth, Kansas, until October 15, 1904, when he was transferred to the Presidio of San Francisco, where he was on duty until September 5, 1905. He then served at Fort Snelling, Minn., to April 9, 1909. He was aide to President Taft and assistant to Officer in Charge of Public Buildings and Grounds, part of which time he served at San Antonio, Texas.

He was aide to Major General Arthur Murray at Washington, D.C., to March 9, 1912. Upon his relief from that detail, he continued on duty at the Presidio with the 1st Cavalry, to May, 1913. He then served at Yosemite Valley to November, 1913; and at the Presidio of Monterey, Calif., until December 31, 1915. He was aide to Brigadier General George Bell, Jr., at San Antonio, to May 15, 1916, and at El Paso, Texas, to October, 1916, when he became Assistant Adjutant of the El Paso District, serving as such until March 13, 1917.

Ordered to Hawaii in March, 1917, General Pratt was assigned to duty with the 4th Cavalry at Schofield Barracks. He was transferred to the Signal Corps for duty with the Aviation Section on August 5, 1917, but continued on duty with the 4th Cavalry until October 3, 1917. Re-

(Continued on Page 4).

THE SECOND BOMBARDMENT GROUP

By the Langley Field Correspondent

The 2nd Bombardment Group, GHQ Air Force, was organized at Moulon, France, September 10, 1918. It consisted of the 96th, 20th and 11th Day Bombardment Squadrons, the 464th Construction Squadron and the 12th Photo Section.

The 96th Squadron was the veteran of the organization, for it had been engaged in offensive operations against the Germans since May 18, 1918. On September 18, 1918, the 166th Bombardment Squadron (which later became the 49th, now a unit of the Second Bombardment Group) joined the Group to complete the organization.

The record of the Group in action was an enviable one. It participated in the operations in the Toul Sector, Lorraine, St. Mihiel, and the Argonne-Meuse first and second offensives. The results obtained in the face of difficulties, due to obsolete equipment and the superior enemy "Circuses" which were thrown into the fight against them, are testified to in the numerous citations which the Group received.

The Group was ordered disbanded on December 12, 1918, but the final demobilization took place in February, 1919, at Mitchel Field, New York. It was reorganized at Ellington Field, Houston, Texas, in August, 1919. In June of 1922 the Group was transferred to Langley Field, where it has since become a part of the life of Tidewater, Virginia.

The peace-time accomplishments of the Group do not need to be recited to the people in the vicinity of Virginia. Too well they recall the great massed flights of the period 1926 to 1929, when the Squadrons demonstrated their ability to operate swiftly and accurately either on this coast or the West coast within a few hours after concentration orders were received.

Errands of mercy have been performed willingly and often in the face of great danger, as witness the relief of Tangier and Smith Islands, which were ice-bound this past winter, causing a serious food shortage; and the heroic work of Major Barney M. Giles, Lieut. Patrick, Staff Sgt. Hamilton and Corporal Connor, in the rescue of C.C.C. men stranded at night on ice floes in terrible weather, for which these peace-time heroes were awarded the richly deserved Distinguished Flying Cross.

Upon the advent of the GHQ Air Force, the methods of operation and the equipment available increased in efficiency the work of an organization whose history was rich and whose morale was of the high calibre that made this unit so outstanding during the trying days of the World War.

So today, the citizens of the Peninsula may see swift ships speeding over their peaceful homes and quiet villages, and know that the officers and men who are flying and maintaining them are devoting their lives and sincerest efforts to keep this peaceful land safe from the blight of war. That is the reason for the continued and efficient training in navigation, bombing and gunnery, and for the roaring motors in the thrilling formations that slide so easily through the skies.

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Line Appointment for General Pratt

(Continued from Page 3).

turning to the United States the latter part of October, 1917, he served at Kelly Field, Texas, to November 13, 1917. After duty as Post Adjutant at Call Field, Wichita, Texas, to January 26, 1918, he served with the Division of Military Aeronautics at Washington until October 10, 1918, when he sailed for France and was on temporary duty with the A.E.F. in connection with special aviation until December 4, 1918. Returning to the United States the same month, he became a member of the Board of Organization at Washington, on which he served to January 13, 1919. He commanded Kelly Field to March 15, 1919, and then served with the Advisory Board of the Air Service until August, 1919, part of which time he was Assistant and Acting Executive.

General Pratt attended the General Staff College, Washington, D.C., to June 30, 1920, and during the three months following he commanded Kelly Field. After duty as Air Officer of the 8th Corps Area, Fort Sam Houston, Texas, to April 25, 1921, he attended the advanced bombardment training course at Kelly Field, graduating on June 30, 1921. Completing the course at the School of the Line at Fort Leavenworth, Kansas, in June, 1922, as a distinguished graduate, he next completed the one-year course at the General Staff School at Fort Leavenworth (graduating August 15, 1923) and the one-year course at the Army War College, graduating on June 30, 1924.

General Pratt was Chief of the Training and War Plans Division, Office of the Chief of the Air Corps, to May 31, 1928, following which he commanded the post of Mitchel Field, N.Y. Ordered to duty in Hawaii in July, 1929, he served as Department Air Officer to July 19, 1930, when he returned to the United States and was assigned to duty as Commanding Officer of Wright Field, Ohio. On March 10, 1935, he assumed command of the Second Wing, General Headquarters Air Force, the headquarters of which is at Langley Field, Va., where he is at present serving in that capacity.

LANDINGS WITHOUT WHEELS

As the Selfridge Field News Letter Correspondent whimsically puts it, further test of the advisability of landing a PB-2A with wheels in the retracted position was a recent occurrence. He goes on to say that 1st Lieut. Murray C. Woodbury, en route to Fort Leavenworth, Kans., in an airplane of this type for the purpose of engaging in a tactical problem, was flying at about 2,000 feet and had reached a position about 50 miles east of Fort Leavenworth when the engine "threw" connecting rods in both banks of No. 2 cylinder, causing dense smoke and apparent fire.

Lieut. Woodbury at once adjusted the stabilizer, throttled the motor back and called to his passenger to "bail out." The latter, Private P.G. Vaughan, 3rd Air Base Squadron, without hesitation climbed over the side and hung by his hands along the fuselage. At this moment, Lieut. Woodbury, who was out on the wing beside the cockpit, decided there was no fire and that he would attempt a forced landing. He motioned Private Vaughan back into the cockpit, but the latter was unable to get back and dropped free.

Lieut. Woodbury managed to get back into the cockpit and, in a shower of oil and smoke, set the plane down on its belly in a small plowed field.

Possibly, under the stress of the occasion, Lieut. Woodbury had no time to lower the landing wheels. It is more than likely, however, that, finding no suitable landing place in the immediate vicinity, he calculated a "belly landing" in a small area would be the safest after all, as the plane would skid along the ground for only a short distance, whereas a landing on the wheels might result in their striking a rough spot, with consequent nosing over of the plane, injury to himself and greater damage to the airplane.

As it turned out, the plane suffered no damage beyond a bent propeller and a crushed prestone radiator.

Private Vaughan, in the meantime, had opened his chute about 100 feet from the ground and landed safely. It was his first airplane ride since enlisting. When asked why he delayed so long in pulling the rip cord, he unperturbedly replied that the Supply Sergeant had told him not to lose his gloves and he had a hard time finding the rip cord with them on. He still has the gloves and also the honor of being the first to get away with "bailing out" of the rear seat of a PB-2...

Selfridge Field pilots are high in their praise of Lieut. Woodbury's courage and coolness under the circumstances. Our Correspondent states that the slight damage suffered by the airplane was [illegible] Lieut. Woodbury's first accident in approximately 3,000 hours of flying, both military and commercial, in the last 18 years, and that the conduct of both the pilot and passenger in this emergency is a credit to the Air Corps.

From Hawaii comes another story of a safe landing, minus wheels, of a B-12A Bombardment airplane. Shortly after taking off from Luke Field and while raising the wheels, the right wheel assembly fell off and hit the ground in the rice fields near Pearl City. Lieut. Chester P. Gilger, who was flying in formation with Lieut. Norman L. Callish, both being members of the 72nd Bombardment Squadron, notified the latter by radio of the accident and also called the ground station.

What will he do? That was the question everyone was asking. Would he land in the water near Ford Island, in the cane field, on Luke Field or Wheeler Field, or resort to his parachute? Lieut. Callish was notified to use his own judgment. However, if he decided to land on the ground, it was recommended that he land at Wheeler Field.

Knowing that belly landings had been made numerous times without serious damage to the airplane or personnel, Lieut. Callish chose the latter course, and when all was in readiness came in and made a beautiful landing without a bounce. The tail of the plane rose momentarily as he hit the ground and then settled back into a nice slide. There was no tendency to ground-loop. The only damage done was to the propeller tips and to the bomb-bay doors.

New propellers were soon installed, and the plane was flown back to Luke Field for repairs by the Hawaiian Air Depot.

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NICE GOING IN AN O-25 PLANE

In reading accounts of various flights in the News Letter, Kelly Field desires to submit the following as a mark for others to shoot at, in view of the fact that it was performed with obsolescent - equipment - an O-25.

Captain R.E. Randall, on an extended navigation training flight between classes recently, was delayed by bad weather at Boston. In order to be back for the beginning of the new class on Monday morning, he departed from Boston at 7:15 a.m. on Sunday, and began bucking head winds which prevailed during the remainder of the flight to Kelly Field. After being delayed two hours in New York, he pushed steadily homeward. Daylight waned one hour east of Maxwell Field, and the remainder of the flight was made after dark, arriving at Kelly Field at 2:30 a.m. Monday morning. Continuous radio communication was maintained with Air Corps and Dept. of Commerce stations 80% of the time.

COLOMBIAN TROPHY PRESENTED TO 3RD GROUP

Barksdale Field, Shreveport, La., was the scene on December 9th of the presentation of the Colombian Trophy to the Third Attack Group, GHQ Air Force, by Major General Frank M. Andrews, Air Corps. This beautiful silver Trophy, which was presented to the United States by Major Benjamin Mendez, of the Colombian Air Force, in the name of the Republic of Colombia, is to be awarded annually to the Group of the GHQ Air Force having the lowest accident rate per thousand hours of flying for the preceding training year. The Third Attack Group became the first custodian of the Trophy by virtue of having had only two accidents in 9,193 hours, a rate of .218 per thousand hours.

General Andrews flew from Langley Field to Barksdale Field in the giant Douglass command transport. He was accompanied by several GHQ Air Force staff officers, Private Hiette S. Williams, his co-pilot, and a crew chief. The General carried the Trophy in the plane with him to Barksdale Field.

In his speech of presentation, General Andrews said in part:

"Military flying is a dangerous profession. Accidents have always occurred and will continue to occur, but a certain proportion are preventable. We of the Air Corps gladly accept all necessary risks and, in spite of the loss of loved and respected comrades, we carry on.

In the past few years, airplane speeds have tremendously increased, due principally to greater horsepower and to cleaner design. Both of these factors have increased the danger incident to flying, for the reasonsthat greater horsepower requires more thorough understanding and greater care in engine operation; cleaner designs have raised the stalling speed and required the installation of flaps, and both factors have increased the number of cockpit gadgets and have made 'cockpit trouble' something that can be avoided only by the minutest care and attention to detail."

The presentation ceremony was followed by an inspection of the personnel of the Third Attack and Twentieth Pursuit Groups, and by an aerial review of both Groups by General Andrews and Brigadier General Gerald C. Brant, Third Wing Commander. Shortly thereafter, General Andrews and his staff left for Langley Field, where he resumed his duties at General Headquarters Air Force Headquarters.

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During November, 1936, the Engineering Department of the San Antonio Air Depot, Duncan Field, Texas, overhauled a total of 21 airplanes and 75 engines and repaired 17 planes and 25 engines.

FIELD EXERCISES BY 9TH BOMB. SQUADRON

The 9th Bombardment Squadron recently returned to Hamilton Field from a most successful field exercise at Stockton, Calif. Sixteen officers, five Flying Cadets and ninety-five enlisted men participated, and a week of perfect weather made possible a diversified, interesting and complete training maneuver. A very marked improvement in field technique is being accomplished with repeated practice. The smoothness of operation under field conditions is the result of the diligence, enthusiasm and hard work of all those participating.

Under the direction of Captain K.N. Walker, the 9th Bombardment Squadron participated in practice bombing, formation gunnery and interception problems. One of the most interesting missions was an attack against the target at Muroc Dry Lake. Nine B-10B airplanes, loaded with 300-pound "live" bombs, conducted the attack. Both day and night flying was conducted, and every mission was featured by a practice "Fog Flying Mission" for training in instrument flight. The procedure for this valuable training is becoming routine for this Squadron. At any time during the conduct of a mission, a fog condition is simulated. The squadron leader will announce a compass course the duration of the flight and air speed, after which each pilot of the formation goes "under the hood" and, at one minute interval and designated altitudes, proceeds to the rendezvous. With practice, the maneuver is easily and successfully accomplished, and the training is invaluable.

Baseball and volleyball games, gas mask drills, and songs around night camp fires made the days busy, instructive and entertaining.

"The Stockton Chamber of Commerce, as well as many of the local business organizations did much to make the off duty hours most enjoyable," says the News Letter Correspondent, and he adds: "We have been assured that the welcome sign will always be out for the Air Corps at Stockton."

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The last few weeks of the past year were busy ones for the members of the 7th Bombardment Group at Hamilton Field, Calif. After completing maneuvers in the Pacific Northwest, all squadrons returned to their base and were immediately ordered to take to the field in individual squadron maneuvers, using different outlying fields as their base of operations.

Judging from reports and comments by the personnel of all the squadrons, much benefit was derived, both in military tactics and social contact.

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THE HQ. & HQ. SQUADRON, EIGHTH PURSUIT GROUP, GHQ AIR FORCE

This Squadron was organized September 1, 1936. The components from which the Squadron was created consisted of the 58th Service Squadron, the old Headquarters Detachment of the 8th Pursuit Group and various other units stationed at the Langley Field Air Base. Under the present reduced tables of organization, the Squadron at the present time consists of seven officers and 77 enlisted men. Of this number of officers, four are members of the Group Staff and three are in the Headquarters Squadron proper.

The squadron organization as it is set up by tables of organization consists of four main divisions as follows: Group Headquarters and Communications Section, Headquarters Section, Headquarters Squadron, Flight Section and Transportation Section.

First Lieut. John E. Bodle, Air Corps, is Commanding Officer of Hq. and Hq. Squadron, while 1st Lieut. D.D. Hale is Adjutant and Flight Commander, and 2nd Lieut. Joseph H. Wilson, Air Reserve, Supply and Mess Officer, Assistant Flight Commander and Transportation Officer.

The Group Headquarters and Communications Section furnishes to the Group Commander all the personnel to operate Group Headquarters, such as administrative personnel, operations, engineering and technical, and communications personnel - 28 men.

The Headquarters Section of Headquarters Squadron constitutes the administrative personnel of the Squadron and includes the First Sergeant, personnel clerks, Mess Sergeant and cooks - 14 men.

The Flight Section has the direct care and responsibility of the airplanes assigned for the use of the Group Staff officers. All classifications of trades specialists are carried in this Section, such as Airplane Mechanics, Engine Mechanics, Aircraft Metal Worker, Aircraft Instrument Mechanic, Technical Clerks, etc. - 18 men and 3 airplanes.

The Transportation Section has the care and responsibility of all the tactical transportation assigned to the Group. At the present time this consists of 27 pieces. As far as practicable, drivers for these vehicles are furnished from the men in the Section, but when the Group takes the field as a Group, other drivers have to be brought in as needed from the various squadrons - 16 men.

So much for the organization of the Squadron. Many interesting things are daily being done in the Squadron, of which a few may be mentioned, as follows:

At the present time the Squadron is maintaining an XA-14 airplane which has been loaned to the Group from Wright Field for certain tests to be accomplished under the direction of GHQ Headquarters. A bi-motored, low-wing monoplane of monocoque construction, all the wheels are fully retractable into the fuselage. It has two Wright "Whirlwind" twin-row motors and mounts a 37 mm. gun in the nose between the motors.

Two officers of the Squadron are members of the Group Intercept Board and are working daily on plans and methods to accomplish interceptions by Pursuit on aircraft. A great deal has been learned from the work so far, and the ability of the Board to direct and plot aircraft has increased by leaps and bounds. A system has been worked out and, with greater training on the part of the piloting personnel, a new and almost certain method of ground to air radio control will be an accomplished fact.

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AMATEUR RADIO STATION AT LANGLEY FIELD

Arrangements have been completed to establish an Army amateur radio station at Langley Field, Va., and the station is already in operation. Personal messages may be sent anywhere in the world at no cost whatever. The service will not be used for official purposes but only for the post personnel in their private communications.

While delivery is not guaranteed, the delivery percentage is reasonable compared with commercial service. For Panama, West Coast, Hawaii and the Philippines, the service is excellent, with deliveries nearly 100 percent. For China and Alaska there is fair service in 48 hours.

In general, the service is excellent to all large cities. Delays occur in delivering to small towns where no amateur station, Army or civilian, exists. In the latter case, the messages are mailed from the station nearest the destination. Messages to China must be sent only to personnel of the Army, Navy and Marines.

The station is operated voluntarily by Private William H. Stull, after his hours of regular duty, on the official Army radio net. Private Stull is willing to handle up to 50 messages a day in the order in which they are received.

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Ten new electric gun sights have been installed on P-26's of the 17th Pursuit Squadron, Selfridge Field, Mich., for service test. So far, tests have been conducted on tow targets only, due to the fact that the scheduled gunnery camp at Oscoda was cancelled. The annual ammunition allowance having been expended, consensus of opinion seems to be favorable concerning the new sights, and they are expected to give great improvement in firing on ground targets.

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31ST BOMBARDMENT SQUADRON IN MANEUVERS

The 31st Bombardment Squadron, stationed at Hamilton Field, Calif., recently completed its individual maneuvers, using as the base of operations the airport located at Fresno, Calif. Supplies were transported by plane on the morning of November 30th. Camp was established and a hot supper was waiting for the members of the truck train which arrived after dark.

One of the missions called for the camouflaging of one of the planes. The methods used to hide the plane will not be divulged, but the question - "Was there an airplane located at that spot," asked by a member of the Observation flight sent out to find the plane leaves little doubt as to the success of the methods used. The remainder of the maneuvers comprised routine Bombardment missions.

During the Maneuvers, every airplane was available every day, this being made possible by the hard work of the maintenance crew, who worked at all hours of the day and night, simulating wartime conditions. Radio contact was maintained by the field radio station with Hamilton Field, and supplies were replenished without delay.

On Sunday, December 6th, the Squadron held open house for the City of Fresno. It is estimated that 25,000 people attended. "Too much cannot be said for the hospitality of the people of Fresno," comments the News Letter Correspondent. The members of the Squadron were entertained by Mr. McAlpike, a prominent citizen of the community, at a dutch supper. A grand time was had by all. The officers were guests at a dinner given by the Chamber of Commerce. Major Taylor expressed the appreciation of the 31st Squadron for the hospitality extended by the City of Fresno.

Camp was broken on December 8th, and the Squadron returned to Hamilton Field. The Maneuvers were very profitable to the Squadron, not only in a military sense but socially as well, for many new friends were gained.

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NEW COMMANDER FOR HAMILTON FIELD

Colonel Davenport Johnson assumed command of Hamilton Field Air Base on November 19th, succeeding Colonel C.L. Tinker who, after completing 30 days leave, was scheduled to sail for New York and then proceed to Washington, D.C., to take up his new duties in the National Guard Bureau.

Colonel Johnson arrived at Hamilton Field in August and was placed in command of the 7th Bombardment Group, relieving Col. Tinker, who commanded both the base and Group forces. Lieut. Colonel G.E. Stratemeyer took over the command of the 7th Bombardment Group recently.

INTER-ISLAND FLIGHTS BY 72D SQUADRON

The 72nd Bombardment Squadron, Major Idwal H. Edwards, Air Corps, Commanding, took off from Luke Field, T.H., for Hilo, Island of Hawaii, on December 14th, with seven Keystone Bombers, two BT's and one escort Amphibian on one of the periodic inter-island training flights.

After a battle against a NE tradewind of gale force for 4½ hours, the flight landed safely at its destination, 220 miles away. Anyone who has wrestled a walloping B-4A or B-5A across the Alleghenies on a windy day will have a faint idea of the activities of the pilots as they passed the lee of Maui.

The following day was spent in inspecting the natural wonders of Kilauea Crater and its surroundings. On December 16th, the Squadron split into two flights, five Bombers and the Amphibian returning as far as Suiter Field, Upolu Point, Hawaii, while the two remaining Bombers and the BT's, flown by pilots who were on their first inter-island flight, circled the island via Morse Field, South Cape, where a landing was made in the teeth of a 50 m.p.h. gale.

Describing the take-off, an observer said: "The Keystones, when given the gun, raised their tails to the position of 'Attention' and then jumped into the air." Enroute to Upolu Point along the Kona Point, a water spout was reported. After gassing at Suiter Field, the reformed Squadron took off and arrived at Luke Field without incident, covering the 180 miles in one hour and 30 minutes, which is pretty good for a Keystone, as veteran pilots, reminiscing over the long dead past, will recall.

Lieut. Colonel Millard F. Harmon, Jr., Air Corps, who recently assumed command of Luke Field, accompanied the 72nd Bombardment Squadron on this flight. This was his first visit to the outlying islands. The Colonel did not waste all his time looking down the empty throats of extinct craters, but took advantage of the opportunity to go out and bag a brace of pheasants.

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The 11th Bombardment Squadron went to Modesto, Calif., for field maneuvers, leaving Hamilton Field, Calif., December 4th and returning on the 10th. While there, a bombing problem was conducted, using 300-pound demolition bombs on a target at Muroc Lake. A gunnery mission, several combat missions and some night flying completed the tactical work from that field.

During the stay at Modesto, the Squadron was very fortunate in having good flying weather and a neat, well organized camp. The City of Modesto gave excellent cooperation to the Squadron in its work and, in addition, provided everyone with entertainment during the off duty hours.

GAS CONSUMPTION TESTS ON PB-2A AIRPLANES

The 27th Pursuit Squadron, GHQ Air Force, Selfridge Field, Mich., was recently engaged in gas consumption tests on its PB-2A airplanes. Under the direction of Lieut. W.R. Hunt, over 50 hours of flying was performed on this project. Data was obtained for different revolutions per minute, also on air speed and manifold pressure at various altitudes. This data was incorporated in a series of elaborate charts and graphs. All pilots of the Squadron had a hand in obtaining this data. Some of the flying missions necessitated the use of oxygen at the higher altitudes.

At this writing the 27th Squadron is busily engaged in making preparations for the winter tests which have been held in the past for quite a number of years. Just now nothing definitely can be stated as to where these tests will be held. The Commanding Officer, Major W. A. Maxwell, already has detailed officers to various jobs in connection with the preparations necessary for the tests. The issue of all the flying equipment and heavier winter clothing necessary is only one of the tasks to be accomplished. Cold weather maintenance of the airplanes will involve the use of engine covers and heaters, which are now being fabricated at Dayton, Ohio.

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AERIAL GUNNERY PRACTICE BY 94TH PURSUIT

Gunnery practice for the 94th Pursuit Squadron, GHQ Air Force, Selfridge Field, Mich., was in order for a period of two weeks recently. The organization was encamped at Camp Skeel, Oscoda, Mich., the locale of gunnery practice by the First Pursuit Group in years gone by.

The Squadron engaged in both ground and aerial gunnery. Both .30 cal. and .50 cal. guns were fired at ground targets, while only .30 cal. were used on the aerial targets.

For ground gunnery, frequent crosswinds made firing rather difficult. In spite of this fact, better than average scores were made. The aerial gunnery was carried out at the intermediate levels, that is, between the altitudes of ten and fifteen thousand feet. The first week was devoted to this type of flying, and all pilots filled their quota of intermediate firing.

The maneuvers were successful in every detail. The work in all departments went off smoothly, little difficulty being experienced with the equipment and there being no delays due to weather. The Squadron returned home happy that their mission was completed. The personnel felt satisfied that the training and practice which they obtained were invaluable.

ENLISTED MEN LEARN RADIO IN HAWAII

Fifteen enlisted men recently graduated from the Communications School of the 18th Composite Wing at Luke Field, T.H., and returned to their organizations at Luke and Wheeler Fields, where they will attempt to put into practice what has been preached for the last six months. The class originally contained twenty students before low grades began to take their toll.

Classes at the 18th Wing Communications School last six months, with two classes a year. Academic work closely follows that given at the Air Corps Technical School at Chanute Field, Ill., with the following subjects being taught: Electricity, Radio Theory, Antennas, Airplane and Ground Radio Sets of the latest available types, Trouble Shooting, Inspection Methods, Message Centers, Field Telephones and Interphones, Power Equipment and Shop. The average code speed of the class was 20.5 words per minute in five-letter code groups. Instruction in operating radio sets in the air was given, with each student averaging 3.8 hours' flying time as radio operators.

The following students completed the course and were graduated: Privates Green Ball, Roy Ball, Calvin C. Brant, Albert J. Bravo, George M. Beck, Arthur P. Coddington, William A. Cummings, Harold C. Fredericks, Alvin J. Lenox, Stanley A. Mokrozycki, Orle Straley, Saul Udman, Rudolph S. Van Meter, Rovert F. Young and Clarence Zielinski.

The 18th Wing Communications School is under the direction of 1st Lieut. Daniel A. Cooper, Air Corps, with Corporal Raymond L. Dickson and Private Alfred W. Pound as instructors.

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LIEUT. ZILER BRINGS HOME THE -- LAUNDRY

Second Lieut. John C. Ziler, Air Reserve, stationed at Selfridge Field, Mich., is being congratulated by radio fans of the field and laundresses on having established a new record for bringing in a towed target with the minimum altitude.

On December 14th (or was it the 13th?) Lieut. Ziler carefully flew his P-26C back to Selfridge Field with the aerial target in tow, and gracefully dropped the remnants of the frayed and tattered tow target. The elated 17th Pursuit Squadron is displaying the relic with pride as an example of their effectiveness in gunnery practice. Although there were no bullet holes in the target, Lieut. Ziler, in passing over the officers' quarters area, managed to bag three radio aerials and one clothes line (complete, with diapers).

NEW TEXT ON OBSERVATION AVIATION

Captain O.P. Weyland, Air Corps, Chief of the Observation Section, Air Corps Advanced Flying School, Kelly Field, Texas, recently completed a trip by air, during which he visited the Air Corps Tactical School, Maxwell Field, Ala.; the Infantry School, Fort Benning, Ga.; the GHQ Air Force Headquarters, Langley Field, Va.; the Coast Artillery School, Fort Monroe, Va.; Office of the Chief of the Air Corps and Office of the Chief Signal Officer, Washington, D.C.; the Command and General Staff School, Fort Leavenworth, Kansas; the Cavalry School, Fort Riley, Kansas, and the Field Artillery School, Fort Sill, Oklahoma.

Captain Weyland, who is now engaged in writing a new text on Observation Aviation for use at the Advanced Flying School, made this trip for the purpose of conferring with authorities at these schools and stations, to the end that the instruction at Kelly Field in cooperation between Observation Aviation and the various ground and air combat arms be coordinated and improved.

Rapid development of new combat equipment and changes in organization and tactics are materially changing the technique and tactical employment of Observation Aviation. The employment of Observation with an air force demands long-range equipment and special training, especially in navigation. The reorganization of army ground forces into smaller, highly mobile units, largely motorized, with accompanying mechanized forces, will increase the importance of close cooperation with Observation Aviation and will necessitate a high degree of training on the part of the Observation team.

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RECRUITING EASY FOR THIS SOLDIER

Several weeks ago, Private Jeff White, of Langley Field, Va., while visiting his home on pass, convinced two men that the Air Corps at Langley Field was the only opportunity left open for the young man of today. After being duly examined, the two applicants were accepted for enlistment.

Prior to Private White's departure, the Commanding Officer of Langley Field announced that every soldier was a potential recruiter, and that a five-day furlough would be granted to each soldier bringing in an applicant who was accepted for enlistment. This furlough is in addition to the 30 days each year, the amount of furlough time for securing recruits not to exceed ten days.

Receiving the reward of ten days justly due him, Private White returned to his home at Colerain, N.C. Knowing full well that any additional recruits that he brought in on this trip would avail him no more furlough time, he nevertheless decided to emerge from the retail market and handle only wholesale business hereafter.

Equipped only with an ordinary soapbox and the gift of oratory, he made his modest stand, and when he returned to Langley Field he wore a triumphant grin and had six more applicants in tow.

"One wonders," says the Langley Field Correspondent, "what would happen in regard to recruiting on this field if this man was permanently assigned to recruiting duty and would devote all his time in the pursuit thereof, instead of just rounding up eight or ten in his spare moments at home."

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SUB-ZERO ALTITUDE FLIGHT TO KELLY FIELD

Testing long non-stop flights through the sub-stratosphere, ten speedy Pursuit planes from Barksdale Field, La., landed at 12:15 p.m., December 12th, at Kelly Field. The aerial journey of 330 miles required two hours and 15 minutes, including a circle above San Marcos. Although no record was made by the Army planes, the flight was made at an altitude of between 21,000 to 22,000 feet.

The pilots were equipped with heavy leather flying suits, oxygen tanks, and leather face masks. The planes had supercharged engines.

Major Armin F. Herold, commander of the 20th Pursuit Group, who accompanied the flight, said the planes were in sub-zero temperatures for most of the distance, and that cities fifty miles away were visible from the high altitude. Leading the test flight, the first of this type to be made by the Third Wing of the General Headquarters Air Force at Barksdale Field, was Captain M.R. Nelson. The other pilots were Lieuts. W.R. Shephard, G.P. Disosway, D.N. Motherwell, William Eades, C.T. Edwinson, D.C. Strother, R.P. Cork and J.L. Gentry. After the planes were refueled and checked, Captain Nelson led his flight from Kelly Field at 7:15 p.m., via Dallas, for Barksdale Field.

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LANGLEY AIRMEN GO WEST FOR BIG BOMBER

The first ferry crew recently departed from Langley Field for Seattle, Wash., to obtain for the 2nd Bombardment Group the first of the YB-17's. Air Corps personnel comprising the ferry crew consisted of Major Barney M. Giles, Airplane Commander; Captain Cornelius E. O'Connor, co-pilot; 1st Lieut. William O. Senter, Navigator; Tech. Sgt. Charles E. Moslander, Radio Operator; and Master Sgt. Floyd B. Haney and Staff Sgt. Arthur Jolly, mechanics.

"It is not exactly known when the first plane will be ready to proceed to Langley Field," says the News Letter Correspondent, "but we are all looking forward to its arrival."

COSMIC RAY FLIGHTS

One purpose of the Stratosphere Balloon Flight, made in 1936 by the Army and the National Geographic Society, was to take and record measurements of cosmic ray intensities and influences at all altitudes from the ground to the highest altitude possible to attain, which was 72,395 feet. A good record was obtained from 16,000 feet up, but due to the very rapid ascent and to the loss of batteries which were released as ballast on the descent, no suitable record was obtained from the ground to 16,000 feet. To assist in completing the records, the Army Air Corps was again called upon to make flights for intermediate observations between the ground and 24,000 feet. The flights were made for the U.S. Bureau of Standards and Dr. W.F.G. Swann of the Bartol Research Foundation, at Swarthmore College, Swarthmore, Pa., near Philadelphia.

A Fairchild C-8, Bolling Field's photographic ship, was used to carry the necessary equipment, and was piloted by Captain H.K. Baisley, Photographic Officer at Bolling Field. The same plane was used by Captain Baisley while performing photographic work during the Stratosphere Balloon Flight. Four flights were required to make the necessary recordings, three of which have been completed. The first was a two-hour observation at 10,000 feet, which was made on December 21, 1936. The next day, a one-hour observation was made at 15,000 feet, and on the third day another one-hour observation at 20,000 feet. A fourth observation of 45 minutes' duration at 24,000 feet has yet to be taken.

An interesting account of these observations and their results will be published by Dr. Swann in a future issue of the National Geographic Magazine, along with many interesting photographs taken during the Stratosphere Balloon Flight.

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FIELD EXERCISE BY 88TH RECON. SQUADRON

The 88th Reconnaissance Squadron recently returned to Hamilton Field from a Field Exercise at Redding, Calif., participated in by the entire Squadron. Seven days were spent in the field, three of which were used for search and patrol missions based on an assumed situation, and two on reconnaissance and aerial photography. During the seven days, 162 hours and 45 minutes were flown, making an average of 6 hours and 19 minutes per airplane per day in commission. This was due to excellent weather and the complete cooperation of all members of this command.

The personnel were so busy that two invitations to dinner by the Chamber of Commerce and the Rotary Club had to be regretfully declined. On the last night, the officers of the District Headquarters, Redding CCC District, gave a dinner for the officers and cadets of the 88th Squadron which was thoroughly enjoyed by all.

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COLONEL TINKER LEAVES HAMILTON FIELD

If it had happened in the Philippine Islands it would have been called a despedida, and the well wishes of the other guests would have been expressed to the travelers with the native "Mabuhay." In Hawaii, it would have been called a luau, and that word which has often been called the tenderest of Godspeeding farewells, "Aloha," would have sped the guest of honor on his way. But, whatever tongue you may express it in, it is doubtful if any can excel the good old American style in which Colonel C.L. Tinker, erstwhile Commanding Officer of Hamilton Field, Calif., was sped on his way at a farewell dinner given in his honor by the Medical Department at that station on the evening of December 15th.

On the right of the host, Major F.L. Pratt, M.C., sat Colonel Tinker, and on his left, Colonel Davenport Johnson, Air Corps, incumbent Commanding Officer of the Marin County Air Base. Mrs. Pratt occupied the hostess seat. Beside Col. Tinker sat Mrs. Johnson, and Mrs. Tinker was escorted to dinner by Colonel Johnson. Other guests included Colonel and Mrs. G.E. Stratemeyer, Major and Mrs. W.D. Vail, Major and Mrs. W.F. De Witt, Captain and Mrs. P.C. Gilliland, and Captain and Mrs. J.P. Smith. The enlisted men of the Detachment had as their guests Master Sergeant G.P. Klingler and Corporal J.J. Moran.

A surprise denouement occurred at the close of the dinner, when Master Sergeant A. Martin, Hospital Sergeant Major, played a phonograph record in his own resonant voice, bidding farewell to Colonel and Mrs. Tinker on behalf of the officers and enlisted men of the Medical Department. In it he requested Colonel Tinker to forever keep the record as a souvenir of their affection and esteem. Colonel Tinker was then presented with a departing gift in the form of a traveling case, completely equipped.

Colonel Tinker responded with a short acknowledgment of the gifts and said that both he and Mrs. Tinker would long remember the pleasure of their association with the personnel of Hamilton Field. Colonel Johnson was called upon and spoke briefly, expressing deep satisfaction with his new command.

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Major Christopher W. Ford (Captain) upon the completion of his present tour of duty in the Philippines, will assume the duties of Instructor, Air Corps, Ohio National Guard, Cleveland, Ohio.

Biographies

LIEUT. COLONEL HAROLD A. STRAUSS

Lieut. Colonel Harold A. Strauss, Air Corps, now on duty as Chief of the Procurement Section, Materiel Division, Air Corps, Wright Field, Ohio, was born in Ohio, September 11, 1887. Graduating from the U.S. Naval Academy June 6,1910, he was commissioned Ensign. He resigned from the Navy March 28, 1913, to accept on the following day a commission as 2nd Lieutenant, Coast Artillery Corps, U.S. Army. Colonel Strauss served with this branch of the Army until September,1920, when, at that time on duty as Assistant Chief of Staff for Military Intelligence, 2nd Corps Area, he was detailed to the Air Service and assigned to duty as a student at the Air Service Balloon School at Ross Field, Arcadia, Calif.

Upon the completion of the course of instruction at this school, he received the rating of Balloon Observer, as of April 26, 1921, and was then transferred to Langley Field, Va., for training at the Airship School. While a student at this school, Colonel Strauss also served as assistant to the Commanding Officer of the First Provisional Airship Wing.

Completing his training as an Airship Pilot, and receiving the rating as such, effective August 13, 1921, he remained at Langley Field, serving in the capacity of Assistant Commandant of the Airship School and later as Officer in Charge of Training, and as Instructor, until May 1, 1922, when he was transferred to the Engineering Division at McCook Field, Dayton, Ohio, and assigned to duty as Chief of the Lighter-than-Air Section.

Colonel Strauss commanded the Airship C-2 on its successful flight, in September, 1922, from Langley Field to the West Coast. Unfortunately, this airship, while being maneuvered from the hangar at Brooks Field, Texas, preparatory to the take-off on the return flight to Langley Field, was completely destroyed by fire caused by an explosion when an extremely strong gust of wind resulted in the ship breaking away from the maneuvering party, striking the steel framework of the hangar door, tearing the fabric and rupturing the gasoline tank.

In the summer of 1923, accompanied by Master Sergeant William J. Bennett, Col. Strauss piloted the Airship AO-1 and conducted the experiment of spraying a poisonous mixture on trees at Henniker, New Hampshire, which were infested with the Gypsy Moth.

Transferred to San Antonio, Texas, in March, 1925, Colonel Strauss completed the special observation course at the Advanced Flying School, Kelly Field, Texas, and received the rating of Airplane Observer. In September, 1925, he was transferred to Scott Field, Belleville, Ill., where he served as Assistant Commandant of the Balloon and Airship School until November, 1926, and thereafter, until May, 1927, as Operations Officer of the 21st Airship Group and Senior Instructor of the Balloon and Airship School. For the next three years he was stationed at Kelly Field, Texas, being assigned to the 24th School Wing Headquarters and performing among various other duties those of post auditor.

In June, 1930, Colonel Strauss was assigned to duty as student at the Primary Flying School at Brooks Field, Texas. He completed the primary course in February, 1931, and the advanced course at the Advanced Flying School, Kelly Field, in June, 1931, whereupon he was given the rating of Airplane Pilot. On June 29, 1931, he reported for duty at Wright Field, Dayton, Ohio, and since that time his duties have been connected with procurement activities.

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LIEUT. COLONEL JOHN C. McDONNELL

Lieut. Colonel John C. McDonnell, now on duty with the 18th Pursuit Group at Wheeler Field, T.H., as Commanding Officer, is one of the veteran pilots of the Air Corps, he receiving his rating as Junior Military Aviator on September 1, 1916.

Born in Baltimore, Md., November 9, 1887, Col. McDonnell graduated from Loyola College with a B.S. degree in 1908. Prior to entering the military service he followed the profession of surveyor. On March 3, 1913, he accepted a commission as second lieutenant of Cavalry, U.S. Army. On December 9,1915, he was attached to the Aviation Section, Signal Corps, and reported on the 23rd of that month at the Signal Corps Aviation School at San Diego, Calif., for flying training, which he completed in August, 1916.

Assigned to duty with the 1st Aero Squadron, Col. McDonnell served with this organization both at Columbus, New Mexico, and for several months in Mexico with the Punitive Expedition under General Pershing.

Ordered, in April, 1917, to duty at Kelly Field, Texas, he served at this station as instructor in acrobatics and as Officer in Charge of Flying until July 7, 1917, when he was transferred to Chanute Field, Rantoul, Ill., where he also served as instructor in acrobatics as well as at Selfridge Field, Mich., to which station he was transferred on October 1, 1917.

At Ellington Field, Houston, Texas, to

which field he was transferred on December 23, 1917, Colonel McDonnell was Officer in Charge of advanced flying. He trained some of the flying instructors in acrobatics to start an acrobatic stage. Later he was in charge of all training and for a brief time commanded the post.

Transferred to Washington, D.C., in July, 1918, Colonel McDonnel, after being on several week's duty in the Training Section, Office of the Director of Military Aeronautics, was ordered overseas, serving as Commanding Officer of the 7th Aviation Instruction Center, and, from December 30, 1918, as Corps Air Service Commander, 3rd Corps, 3rd Army, at Niewied, Germany.

Upon his return to the United States in May, 1919, he was on duty for several months at Mitchel Field, N.Y., where he was in charge of recruiting and of all flying for recruiting purposes.

Ordered to Aberdeen Proving Ground, Md., in July, 1919, Colonel McDonnell commanded the Air Service troops at that station until June, 1921, when he was assigned to duty as Professor of Military Science and Tactics at the Mass. Institute of Technology, Cambridge, Mass. He occupied this position for two years, and during the summer vacation months he served as Executive Officer of summer training camps at Mitchel Field, N.Y.

Colonel McDonnell next completed a tour of foreign service in the Philippines, being on duty as Commanding Officer of Clark Field and the 3rd Pursuit Squadron until August, 1925, when he assumed command of Nichols Field and the 4th Composite Group.

Returning to the United States, he was assigned to the command of the 88th Observation Squadron at Fairfield, Ohio. From May to December, 1926, he was in command of a composite Air Service Squadron at the Exposition at Philadelphia, Pa. After duty as Air Officer of the 3rd Corps Area, Baltimore, Md., until June, 1928, Colonel McDonnell was transferred to Washington, D.C., for duty as Chief of the Personnel Division, Office of the Chief of the Air Corps.

Following the completion of his four-year tour of duty in Washington, he completed the one-year course of instruction at the Air Corps Tactical School at Maxwell Field, Ala., and the two-year course of instruction at the Command and General Staff School at Fort Leavenworth, Kansas, and was then ordered to duty in the Hawaiian Department.

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NEW CHAPLAIN REPORTS AT KELLY FIELD

Lieut. Colonel Raymond J. Griffin, C.C., who reported at the Advanced Flying School, Kelly Field, Texas, last month, succeeding Chaplain E.R. Martin, is - like his predecessor - a priest of the Catholic Church. He has served continuously in the Army as a chaplain for 21 years, but this is his first tour of duty at any place in Texas.

A native of Ireland, Chaplain Griffin was raised in New York and completed his religious education at the Catholic University of Washington, D.C. He was appointed Chaplain in 1917, and his first assignment was at Governors Island, N.Y. During the World War he went to France as Chaplain of the First Separate Brigade, Coast Artillery, having been promoted to the temporary rank of Captain. Later he became senior Chaplain of the Second Army. Colonel Griffin came to Kelly Field from the headquarters of the 3rd Corps Area at Fort George G. Meade, Maryland.

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RUSSIAN OFFICERS INSPECT KELLY FIELD

The Advanced Flying School at Kelly Field, Texas, was inspected on December 22nd, last, by four Russian officers. They were very much interested in our methods of training.

It was interesting to note that all these officers were rather youthful. The senior, a Brigade Commander in the Russian Air Force, was only 39 years of age. They were very cordial and told the following about their flying training:

Their course consists of two years, the first of which is devoted solely to ground training. The students complete their pilot training in the second year and graduate, with an average of only 65 hours, as qualified pilots of single-engined airplanes. In order to pilot multi-motored airplanes, they must serve as co-pilot in a tactical unit for two or three years.

Another interesting item was the rates of pay received by the Russian Air Force. The average pilot receives 50% more than a line army officer. Then a pilot of a fast airplane receives 25% more than the average pilot, while an instructor receives 50% more than the average pilot and takes two months' leave a year with all expenses paid.

They wondered why we didn't teach our students to do aerobatics close to the ground. They further stated that they used women pilots, and when there was any new difficult job to be done they had a woman do it first, in order to stimulate the men to do better.

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MORE NAVIGATORS FOR THE AIR CORPS

"A well earned Christmas present was handed out to eight Air Corps officers in the form of diplomas as Dead Reckoning and Celestial Navigators," reports the Mitchel Field Correspondent, who adds that "these recent graduates of the Ninth Group Navigation School used various terminalogy in describing the final examination. However, the general concensus was that it was a 'humdinger,' producing several aggravated cases of writer's cramp. The graduation flight to Miami was postponed to a later date. Officers who received diplomas are: Major Duncan, Captains Valentine, Gibson, Denniston, White, Lieutenants Norstad, Beebe and Haskin. Our friend 'Dick' Gibson won the right to be valedictorian and went all the way to Mexico on leave to escape the 'honor.'"

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VARIED PLANES FOR HQRS. GHQ AIR FORCE

Staff officers at the Headquarters of the GHQ Air Force, Langley Field, Va., probably have one of the widest choices of airplanes to fly in the Army Air Corps. This not only facilitates their movements in covering GHQ Air Force activities in the continental United States but enlarges the training scope of pilots and mechanics of the Headquarters Squadron.

Planes now assigned this Squadron include the famous Douglas C-32 Transport, four new A-17 Attack planes which recently arrived from the Northrop factory at Inglewood, Calif., a Martin B-10B Bomber, the brand new Douglas B-18 Bomber, an O1-G Observation plane, and the record-breaking Douglas OA-5 Amphibian. The maintenance of these planes is under the supervision of Major Eugene L. Eubank, Squadron Commander and Headquarters Commandant.

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GENERAL BRETT VISITS KELLY FIELD

Brigadier General George H. Brett, Air Corps, Commanding Officer of the 19th Composite Wing, Albrook Field, Panama Canal Zone, who, with several other officers, had stopped at Randolph Field en route to Panama, visited Kelly Field to renew old acquaintances. Officers in the party included Lieut. Colonel Richard H. Ballard, commander of France Field; Major George H. Beverly, of Albrook Field; 1st Lieuts. Robert S. Israel, Jr., and Turner, of Albrook Field, the latter the engineer officer for the flight. The pilots had made a week-end flight from Mitchel Field, halting at Bolling, Langley, Maxwell and Barksdale Fields. The return trip to Panama was scheduled to be made by way of Brownsville, Tampico, Vera Cruz, Guatemala City, San Salvador, Tegucigalpa, Honduras; Managua, Nicaragua; San Jose, Costa Rica, and David, Panama. The flight to San Antonio consisted of the cargo plane, a Douglas Amphibian and a Bellanca. The planes were checked over at Duncan Field, where a second Amphibian was to be picked up for ferrying to Panama.

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SUB STRATOSPHERE FLIGHT BY 55TH SQUADRON

Supplementing the report on the high altitude flight made on December 15th last by the 55th Pursuit Squadron from Barksdale Field, La., to Kelly Field, Texas, and which appears elsewhere in this issue, the Barksdale Field Correspondent states:

Attaining an altitude of 21,500 feet 25 minutes after take-off at Barksdale Field, La., the 55th Pursuit Squadron, under command of Captain M.R. Nelson, engaged in a sub-stratosphere flight from Barksdale Field to Kelly Field to familiarize pilots with the use of oxygen and operation at high altitude.

The cross-country unit flight was composed of 9 airplanes of the P-26A type, equipped for the use of liquid oxygen, and made the trip the entire distance at the maximum altitude in exactly two hours for the 370 miles.

Maximum altitude was attained at a distance of 40 miles from Barksdale Field, 25 minutes after take-off. Visibility was reported exceptional at this altitude, cities and rivers being easily recognized at a distance of 100 miles. Although the use of the face mask and heaviest flying clothing was necessary, due to the sub-zero temperature encountered, no difficulties were encountered other than those by the Squadron Commander in turning about in his cockpit to check up on members of the flight. The maneuverability of the P-26A was found to be good at maximum altitude, and all equipment functioned satisfactorily according to reports of the personnel on the return flight.

It was found that a considerable reduction in time required for the servicing of the liquid oxygen equipment was possible by the use of several small containers, but this method required several litres more than the excess prescribed in the technical instructions. The equipment functioned perfectly throughout the flight.

The flight was believed to have been the longest made by a unit at maximum altitude in this section of the country. The Squadron returned at normal altitude after dark, non-stop via Fort Worth, Tex.

All pilots on the flight agreed in a general recommendation that enclosed cockpit airplanes with good heating facilities be furnished for future flights of this nature.

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The Airship TC-13 recently made two overnight flights from Moffett Field, Calif. On both occasions it followed the coast line north to the vicinity of Eureka before turning back. Major Elmer Bowling commanded the airship on the first flight, and Major Clarence B. Lober on the second.

18TH RECON. SQD. WORKING ON ALL CYLINDERS

In mid-December, the 18th Reconnaissance Squadron, Mitchel Field, N.Y., moved into its new offices and now, says the News Letter Correspondent, "it can be said that we are carrying on every activity but 'shuteye' and 'nose bagging' beneath the very wings of the airplane. Space to house the various activities was sort of 'chiseled' from the Base Paint and Dope Shop, and while the materials used in construction were temporary in nature, the Base Quartermaster is to be congratulated in relieving a very cramped situation. A higher degree of coordination and teamwork is expected within the Squadron as a result of having all activities concentrated."

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EMERGENCY FLIGHT UNDER ADVERSE WEATHER

Captain Harrison G. Crocker, Air Corps, with Lieut. C.R. Storrie as co-pilot, made an emergency flight on January 1st from Maxwell Field, Ala., to Bolling Field, D.C., for the purpose of bringing Major Thomas L. Gore, Medical Corps, to Walter Reed Hospital for treatment of injuries received in an automobile accident. The plane was a new Douglas C-33, and the flight of 750 miles was made in four hours through adverse weather conditions, the pilots not being able to see the ground after leaving Maxwell Field until they were almost within 100 miles of Bolling Field.

The Bolling Field ambulance was waiting for the plane upon arrival, and Major Gore, a litter patient, was taken to Walter Reed Hospital without delay.

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20TH PHOTO SEC. MOVES TO BOLLING FIELD

Effective January 1, 1937, the 20th Photo Section is moved from Randolph Field, Texas, to Bolling Field, D.C., where the men from that organization and the Bolling Field Photographic Department will be incorporated to function as a unit. The sixteen men transferred to Bolling Field included one Technical Sergeant, two Staff Sergeants, one Sergeant and twelve Privates, and will have reported for duty by January 10th, several members of the organization taking a ten-day delay enroute while traveling.

When completely organized, the 20th Photo Section will consist of twenty enlisted men and one officer, Captain H.K. Baisley, who is now Photographic Officer at Bolling Field. This increase of personnel for the Photographic Section will facilitate the handling of the ever increasing amount of work required of that department.

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THE SPECIAL WRIGHT FIELD NEWS LETTER

The Materiel Division was asked to produce a special Wright Field edition of the News Letter all by itself for the issue of January 1, 1937. Knowing the men behind the guns at the Materiel Division, we felt confident that they would produce the goods. Needless to say, they did, and how! News Letter readers will certainly testify to this fact.

From all standpoints - editorially, typographically and pictorially - the initial issue of the News Letter for the year 1937 was excellent. Those contributing towards its production have set a standard such as we jumble folks in the Chief's office cannot hope to emulate either at present or in the near future. We have not the facilities for work of this kind and, for reasons too numerous to mention, must carry on in our unostentatious way, always with the hope that what appears in the News Letter will prove of interest and profit to our readers.

In the not too distant future we expect at various times to knock on the door of other Air Corps field and activities and ask them to work up a special edition of the News Letter covering their particular functions. It is possible that Wright Field may have to look to her laurels.

Our most sincere congratulations are extended to the Materiel Division for its fine effort in connection with the January 1st issue.

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HIGH ALTITUDE FLIGHT BY LT. ROBERTSON

In recent performance flights in the 8th Pursuit Group, Langley Field, Va., Lieut. W.R. Robertson, Jr., Air Corps, of the 33rd Pursuit Squadron, GHQ Air Force, took his PB-2A airplane up to 39,200 feet, and flew at that altitude for approximately twenty minutes. Lieut. Robertson reported flight characteristics and position by radio every five minutes. After reaching 39,200 feet, Lieut. Robertson reported "frozen controls" - a very unpleasant situation at that altitude. The ship was in a climbing position, and Lieut. Robertson had to throttle back to lose altitude and descend to a warmer layer.

Comments the News Letter Correspondent: "Some say the controls were 'not frozen' but that the pilot was getting weak due to lack of oxygen. Either way, we still think Lieut. Robertson did a good job, 'frozen controls' or 'asleep'."

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LIEUT. COLONEL DUNCAN LEAVES LUKE FIELD

On December 1, 1936, another milestone was recorded in the history of Luke Field, T.H., when Lieut. Colonel Asa N. Duncan, Air Corps, relinquished command of the post and the 5th Composite Group to Lieut. Colonel Millard F. Harmon, Jr., Air Corps. Col. Duncan left for duty at March Field, Riverside, Calif. He availed himself of a leave of absence prior to reporting at his new station.

"It is with sincere regret that the personnel of Luke Field bid 'Aloha' to Lieut. Colonel and Mrs. Duncan," says the News Letter Correspondent, adding that "during the nearly two years that they have been with the Group they have earned the undying respect and affection of the members of the command.

During the period of Lieut. Colonel Duncan's command, many interesting events took place in which the 5th Composite Group had a part. Among the more important of these were the bombing demonstrations and tests for the Department Commander in the Spring of 1935, and the bombing of the lava flow on Mauna Loa during the first week of January, 1936. This highly successful operation, which attracted world-wide attention, was personally led by Lieut. Colonel Duncan. Subsequently the 5th Composite Group played an effective part in the Department Maneuvers of 1936, and more recently in the Hawaiian Department Military Competitions held in November. In addition, numerous special missions were successfully accomplished, such as seed sowing from the air, reconnoitering wild sheep on Hawaii and other projects in cooperation with the Territorial Government.

The 5th Composite Group welcomes its new Commanding Officer, and with confidence born of past accomplishments assures Lieut. Colonel Harmon of its best wishes and whole-hearted support."

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OBSERVATION TRAINING AT KELLY FIELD

Student pilot-observer teams of the Air Corps Advanced Flying School at Kelly Field, Texas, have recently gained valuable experience in reconnaissance flights over the maneuver areas in and near Fort Sam Houston. Through permission granted by Major General Brees, Commanding General of the 8th Corps Area, student flyers of the Observation Section observe and report by radio positions and activity of Infantry and Artillery units of General Parson's 2nd Division at all possible occasions when exercises are being conducted. The Fort Sam Houston regiments in action, in the field, in concealment or on the march, thus afford the best of opportunities for training for the air observers.

BELGIANS STUDY AVIATION AT SAN ANTONIO

Many of the advances made in American civilian and military aviation will be introduced into the aerial defenses of Belgium, according to Lieut. General Maurice Gilleaux, Commander of the Belgian Air Force, who completed an inspection at Kelly and Randolph Fields on December 10th, last. Accompanied by his aide, Lieut. Viscount Eric Stoelberch, the Belgian commander came to the United States two months ago to study the various phases of American aviation. The two visitors left San Antonio for New York City by commercial plane.

General Gilleaux stated that no comparison can be made between military aviation here with that of Belgium because of the difference in population. However, he commended the plan of instruction at both the Air Corps Primary and Advanced Flying Schools and praised the manner in which Kelly Field was maintained, despite the fact that many of the buildings were constructed in 1917 when the field was laid out.

General Gilleaux declined to comment on the European situation, declaring that he had been out of touch with affairs since coming to this country. He was noncommittal as to the possibilities of a European war. The Commander, a major in the Artillery during the World War, entered the Belgian Air Force eight years ago.

At Randolph Field, Lieut. Colonel T.W. Hastey, Executive Officer of the Air Corps Training Center, conducted the two visitors on an inspection of the Primary Flying School on December 9th, and Col. E.A. Lohman, Assistant Commandant of the Advanced Flying School, and Captain W.G. Bryte, Secretary, conducted the inspection at Kelly Field the following day.

The Belgian Air Force Commander and his aide have visited most of the Army aviation fields, several Navy airdromes, and a number of civilian airplane factories. They had just completed a study of March Field, Calif., before coming to San Antonio. They were scheduled to sail for Belgium shortly following their arrival in New York City.

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The Barksdale Field Correspondent states that January always brings forth a great crop of "sweaters" among the second and third grade enlisted men. The Technical Sergeant and Master Sergeant promotion list is due for publication, and every issue of the Air Corps News Letter, the Army and Navy Register or the Army and Navy Journal finds a long line waiting for a peek. First Sergeant Rowen and Staff Sergeant Healey lead the line - always.

Ed Note: Barring unforeseen circumstances, it is expected to publish the Technical Sergeant [illegible] Promotion List in the next issue of the News Letter - February 1, 1937.

OBITUARIES

An airplane accident on January 1st resulted in the death of Lieut. Colonel Frederick I. Eglin, Air Corps, pilot, and Lieut. Howard E. Shelton, Jr., a naval officer, who was a passenger in the plane. Colonel Eglin was enroute from Langley Field, Va., to Maxwell Field, Ala. The wreckage of the airplane was found near the top of Cheaha mountain, highest of the Appalachian peaks in Alabama, fifty miles from Birmingham. It was believed that the accident occurred at 3:00 p.m., at which time a heavy rain was falling and a thick fog hung over the mountainous area.

Colonel Eglin was a veteran Army flier who piloted planes in the World War. A native of New York, he was born on February 23, 1891. Prior to his entry into the Federal military service, Col. Eglin served as Private, Corporal and Sergeant in Company B, 2nd Indiana Infantry, from March 1, 1911, to March 4, 1914. From March 6, 1914, to April 16, 1917, he was Regimental Sergeant Major, 2nd Indiana Infantry. Mustered into the Federal service June 9, 1916, Col. Eglin served on the Mexican Border until mustered out of the Federal service February 28, 1917. On April 16th of that year he was commissioned a second lieutenant, Indiana Infantry. In that month he was attached to the Aviation Section, Signal Corps, U.S. Army, and assigned to the Aviation School at San Diego. Calif., for flying training. He completed this training on July 20, 1917, and was rated Junior Military Aviator September 11,1917.

In November, 1917, he was attached to duty with the 142nd Aero Squadron. He was appointed 1st Lieut. (temporary) in the Signal Corps, U.S. Army, December 15, 1917, and was promoted to Captain, Air Service, October 1, 1918.

On December 6, 1917, Col. Eglin was assigned to duty as Assistant Engineer Officer at the Signal Corps Aviation School at San Diego, and from February 1, 1918 to May 24, 1918, he was Assistant to the Officer in Charge of Flying at Rockwell Field, Calif. Transferred to March Field, Calif., he performed the duties of Assistant Engineer Officer and Assistant Officer in Charge of Flying until December, 1918. In January, 1919, he was assigned to duty as Aero Supply and Disbursing Officer, and Acting Motor Transport Officer, in addition to a variety of other functions at the post, these including the position of Officer in Charge of Flying and the temporary command of the field.

On December 10, 1921, Col. Eglin was transferred to Mather Field, Calif., where he commanded the 9th Squadron as well as the post until May 4, 1922, when he was assigned to duty as Operations Officer.

Transferred to foreign service, he was on duty with the 28th Bombardment Squadron at Clark Field, P.I., from September, 1922, to December 12, 1922, when his station was changed to Nichols Field. Here he performed the functions of Post Adjutant, in addition to other duties, among them those of Operations Officer of the 4th Composite Group, until September 2, 1924, when he was transferred to Kelly Field, Texas. From December 1, 1924, to December 2, 1926, Col. Eglin commanded the 40th School Squadron, in addition to serving as Adjutant, Supply Officer and Mess Officer. He was then detailed as Director of Bombardment in the Advanced Flying School. On August 12, 1927, he was assigned to duty as Executive Officer of the Air Corps Training Center, Duncan Field, Texas, and he occupied this position until August 22, 1929, when he was assigned as student at the Air Corps Tactical School, Langley Field, Va. Upon his graduation from this school in June, 1930, he pursued the two-year course of instruction at the Command and General Staff School at Fort Leavenworth, Kansas. His graduation from Fort Leavenworth in June, 1932, was followed by his assignment to duty as Instructor at the Air Corps Tactical School, Maxwell Field, Ala. In July, 1936, he was assigned to duty at Langley Field, Va., with the GHQ Air Force.

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Misfortunes never appear to come singly. On January 4, 1937, an aircraft accident at Rantoul Ill., resulted in the death of Captain Reginald R. Gillespie and Technical Sergeant Clarence E. Sudduth, Air Corps.

Captain Gillespie was born at Lake Center, Iowa, December 1, 1901. He attended high school in several cities in Montana and later attended the University of Montana for nearly three years.

Qualifying for a Flying Cadet appointment, he began lighter-than-air training at the Balloon and Airship School, Scott Field, Ill., in September, 1923. Successful in the competitive examination for a commission in the Regular Army,he was appointed a 2nd in the Air Corps, June 15, 1924. Upon his graduation from the Balloon and Airship School, Capt. Gillespie was rated Airship Pilot and Balloon Observer, effective August 23, 1924. He remained on duty at Scott Field, serving with the 8th Airship Company to May 18, 1925, and with the 9th Airship Company until the following September, when he reported to the Primary Flying School, Brooks Field, Texas, for heavier-than-air training. His training delayed due to injuries received in an aircraft accident, he completed the primary instruction in September, 1926, and was then transferred to the Advanced Flying School,Kelly Field, where, in March, 1927, he completed the special course for Airplane Observers. He was then transferred to Langley Field, Va., and assigned to duty with the 19th Airship Company.

Ordered to duty in the Hawaiian Department, Captain Gillespie served with the 4th Observation Squadron in July, 1928; with the 72nd Bombardment Squadron to October 2, 1929, and again with the 4th Observation Squadron until August, 1930. During his two years of duty at Luke Field, he performed various duties, such as Squadron Adjutant, Supply Officer, Mess Officer, Communications Officer and Parachute Officer.

Captain Gillespie reported for duty with the 47th School Squadron, March Field, Calif., as Personnel Adjutant, in September, 1930. In

July, 1931, he was assigned to duty at Langley Field, Va., with the 19th Airship Company as Supply Officer. Later he performed the duties of Operations and Engineering Officer, Armament Officer and Communications Officer. For several months in the year 1933, he served as Adjutant of a C.C.C. Company at Fort Meade, Md.

Detailed to pursue the course in heavier-than-Air flying, Captain Gillespie reported in June, 1935, at the Primary Flying School, Randolph Field, Texas. He completed the primary flying course in February, 1936, and the advanced course at Kelly Field, Texas, in June, 1936, specializing in Bombardment Aviation and receiving the rating of Airplane Pilot, effective June 17, 1936. He was then assigned to duty at the Air Corps Technical School at Chanute Field, Rantoul, Ill.

Sergeant Sudduth was born March 22, 1900, at Ridge Farm, Ill. He enlisted in the Air Service February 21, 1922; served at Langley Field, Va., to September 1, 1922; with the 1st Pursuit Group at Selfridge Field, Mich., to July, 1925, when he was transferred to Chanute Field, Rantoul, Ill., where he completed the courses at the Technical School in Engine and Airplane Mechanics. He was appointed a Staff Sergeant in February, 1925, and Technical Sergeant in July, 1930. From June, 1931, to July, 1934, he served in the Philippines, first with the 2nd Observation Squadron and later with the 66th Service Squadron, at Nichols Field. Returning to Chanute Field, he graduated in April, 1936, from the Technical School as an Aircraft Armorer. He was then assigned to duty with the Headquarters and Headquarters Squadron at Chanute Field.

The sincere sympathy of the Air Corps is extended to the bereaved families of these men who died in the service of their country.

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NEW INSIGNIA FOR 32ND BOMBARDMENT SQUADRON

By the News Letter Correspondent

The mighty Martin Bombers of the 32nd Squadron of March Field have just blossomed forth with the new Squadron insignia.

Since its original organization at Kelly Field, Texas, June 13, 1917, and throughout its service overseas during the World War, the Squadron has been without such an insignia. After the Squadron was reconstituted and made active on June 24, 1932, many original ideas concerning an appropriate design that would embody the various activities of the Squadron were submitted. The problem of representing the bombing, gunnery and navigational phases of training of the Squadron was a difficult one. Finally, in October, 1936, by combining several designs submitted by Mr. H.F. Lambert, a St. Louis commercial artist, the present insignia was completed and accepted.

The design is triangular in shape. In the upper half of the triangle, signifying winged destruction, is an emblematic bird grasping two bolts of lightning. In the lower half of the triangle is a bomb superimposed upon the mariners' star, thus grouping together the dual training of the Squadron - training in Bombardment Aviation and in methods of aerial navigation. With this dual mission in mind and with thoughts towards the future when, with planes of even greater radii of action, navigation will constitute a larger part in the successful completion of bombing missions, it is deemed most appropriate that the insignia symbolize these two important functions.

The insignia employs the four basic colors of blue, green, yellow and white. Against a blue background the white emblematic bird is readily discernible. The color scheme is well blended and the insignia presents, as a whole, a pleasing picture.

If the past is any criterion, the new insignia will have its introduction to most sections of the country within a short time. The 32nd Squadron is active in all maneuvers in which Bombardment Aviation is employed and, whether it be Alaska or Florida, the 32nd will be there.

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NARROW ESCAPE FOR COL. STRATEMEYER AND HIS CREW

Lieut. Colonel G.E. Stratemeyer, the new Commanding Officer of the 7th Bombardment Group, and his crew, had a very narrow escape from death or serious injury when, after completing a training flight over the Bay area, he was forced to land in the mud flats of San Pablo Bay. He had circled Hamilton Field in preparation for a landing when one motor cut out, to be followed immediately by the failure of the other. Not having enough altitude to make the field, he was forced to set the ship down in the shallow water about one mile from shore.

The Colonel and his crew, which was composed of Lieut. R.H. Lynn, Sergeant H.W. Elliot and Private R.C. Thompson, were rescued, uninjured, by members of the field's "Crash Boat." The airplane, "The Bird O'Prey, XIII," was formerly flown by Colonel C.L. Tinker, until recently Commanding Officer of Hamilton Field, and was one of the Martin B-10B Bombing planes.

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AIR CORPS OFFICERS ASSIGNED TO ARMY WAR COLLEGE

Special Orders of the War Department, recently issued, detailed ten Air Corps officers to attend the 1937-1938 class at the Army War College, reporting for this duty between August 16 and 21, 1937. These officers are:

Colonel Henry W. Harms (Lieut. Colonel), Commandant, Air Corps Primary Flying School, Randolph Field, Texas.

Major John DeF. Barker (Captain), Major Warren R. Carter (Captain) and Major Lawrence P. Hickey, all of Langley Field, Va.

Major Harry A. Johnson (Captain) Barksdale Field, La.

Major Austin W. Martenstein (Captain) Air Corps Tactical School, Maxwell Field, Ala.

Lieut. Colonel Hubert R. Harmon, March Field, Calif.

Major Alfred J. Lyon (Captain) student at Army Industrial College, Washington, D.C.

Major John Y. York (Captain) Office of Assistant Secretary of War, Washington, D.C.

Major Idwal H. Edwards, Hawaiian Department.

RETIREMENTS

Warrant Officer Eugene C. Braig first entered the service of the United States Army on May 1, 1894, and since that date served continuously, as follows:

Second United States Artillery.

Sergeant, 7th United States Artillery.

Transferred in rank to United States Military Academy Detachment, Field Artillery, August, 1900.

Appointed First Sergeant of that Detachment, August 6, 1900, and continued in service until November 18, 1917.

Commissioned Captain, Aviation Section, Signal Corps, November, 1917.

Assigned to Hazelhurst Field, L.I., New York, as Commanding Officer, 213th Aero Squadron.

Transferred to Ground School, School of Military Aeronautics, Princeton University, December 14, 1917, as head of Military Detachment and Inspector of Ground Schools.

Transferred from Princeton University to Austin, Texas, for the Ground School there.

Closed that school and transferred to Bolling Field, D.C., in March, 1919, where he served as Supply Officer, Finance Officer, Quartermaster, Transportation Officer and Morale Officer until December 31, 1920.

Reenlisted as Technical Sergeant, 99th Squadron, Air Service, January 1, 1921.

Discharged January 2, 1921, and appointed Warrant Officer, U.S. Army, January 3, 1921, and transferred to Langley Field, Va., January 19, 1921, serving thereat to the present time.

During the period of the World War, Warrant Officer Braig's major service was rendered in the capacity of Commandant of Cadets at the School of Military Aeronautics, Princeton University. Serving on this important assignment, he was responsible for the initial basic military training of all cadets attending that institution, many of whom received commissions as officers in the Air Service and served with distinction overseas throughout the period of the World War.

Warrant Officer Braig is advanced on the retired list to the grade of Captain.

Master Sergeant Andrew May, who was recently pplaced on the retired list, was born February 11, 1885, at Nakofalva, Austria Hungary.

Enlisting in the United States Army, July 11, 1905, he served with the 2nd Coast Artillery Company continuously until July, 1920. Then serving in the Philippines, he joined the Air Service and was assigned to the 27th Balloon Company. Returning to the United States in April, 1922, he served for a short period at Crissy Field, Calif., and, in July, 1922, was transferred to Rockwell Field, Calif., serving with the 11th Bombardment Squadron until August 26, 1926, when he was transferred to the 59th Service Squadron. He joined the 95th Pursuit Squadron in June, 1928, served three years with that organization. From July, 1931, to June, 1932, he served with the 11th Bombardment Squadron, and then with the 30th Bombardment Squadron to the date of his retirement.

Master Sergeant May was appointed a Sergeant during his second enlistment. He was promoted to Staff Sergeant in September, 1920; to Technical Sergeant in August, 1926, and to Master Sergeant in June, 1931. All of his discharge papers have been characterized by the word "Excellent."

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EXTENDED ACTIVE DUTY FOR AIR RESERVE OFFICERS

The following-named Second Lieutenants of the Air Reserve have been placed on extended active duty at the stations indicated, their service to expire on the dates given:

Angle, Robert S., Hawaiian Dept. Oct. 14,1939
Altman, Dale Ellis, Hawaiian Dept. June 15,1939
Barton, Joe Earle, Langley Field, Oct. 14,1939
Bates, Earle Eugene,Jr. Hawaii, June 30, 1939
Bernard, Homer D., Panama Canal Dept. June 15,39
Berry, Jack Wilson, Hawaiian Dept. June 30,1939
Borden, Mitchell P., Langley Field,Dec. 14,1939
Boutz, William Ray, Hawaiian Dept. June 15,1939
Bullock, Cady R., Hawaiian Dept. June 15, 1939
Callish, Norman Louis, Hawaiian Dept. June 15,39
Campbell, Blaine B., March Field, June 30,1939
Capp, Wm. Charles, Hawaiian Dept. June 15, 1939
Cheatwood, John H. Hawaiian Dept. June 15, 1939
Clark, Glenn Clair, Panama, Nov. 1, 1939
Cochran, James C. Hawaiian Dept., June 15, 1939
Cocke, Wm. Alexander,Jr. March Field,Nov.20,39
Coddington, Nathan H., Hawaiian Dept. June 15,39
Councill, Wm. H. Hawaiian Dept. June 15, 1939
Culler, Harry Hillus, Ft. Bragg,N.C.,Dec.14,39
David, Wm. Bell, Selfridge Field, June 30,1939
Denison, Howard C. Hawaiian Dept. Aug. 6, 1939
Dennison, Julius W. Jr. Selfridge Field, July 1, 1939.
Diehl, Donald B. Panama, October 25, 1939
Dietz, Harold L. Mitchel Field, Nov. 14, 1939
DuFrane, John L. Jr. Hawaiian Dept. June 30, 39
Fernald, Wm. Irvin, Hawaiian Dept. June 15,1939
Fisher, Charles E. Hawaiian Dept. June 15, 1939
Furlow, James W. Langley Field, Jan. 3, 1940
Gorman, Edmund Theodore, Hawaii, Oct. 14, 1939
Gray, Frederick C.,Jr. March Field, June 15,1939
Haynes, Frank V. Pope Field, June 15, 1939
Hatcher, George A. Selfridge Field, July 1,1939
Higgs, Frank Lott, Hawaiian Dept. June 15, 1939
Hilkes, Clarence Wm. Hawaiian Dept. June 15,1939
Holloway, Benj. G. Hawaiian Dept. Aug. 6, 1939
Hoyt, Stanley C. Hamilton Field, Oct. 14, 1939
Hurst, Herman E. Patterson Field, Jan. 3, 1940
James, Weldon M. March Field, June 15, 1939
Joyce, Edwin A. Langley Field, Oct. 14, 1939
Kinkel, Ross S. Hamilton Field, Oct. 14, 1939
Kreps, Kenneth Ray, Hawaiian Dept. June 15, 1939
Kuhn, David B. March Field, June 15, 1939
Marks, Jack S. Hawaiian Dept., June 30, 1939
Martin, Robert Kay, Hawaiian Dept. June 15,1939
Mason, Ben A., Jr. Hawaiian Dept. June 15, 1939
Nightingale, Frank N. Hawaiian Dept. June 15,39
Olson, Abraham D. Hawaiian Dept. June 30,1939
Paul, Franklin K. Panama, Oct. 14, 1939
Penland, Hugh B. Hawaiian Dept. June 15, 1939
Polhamus, Robert G. March Field, June 30,1939
Rambo, Wilkie A. Panama, June 30, 1939
Rankin, William Q. March Field, June 15, 1939
Rendle, Irvine A. March Field, June 15, 1939
Schmid, Clarence L. Hamilton Field,June 30, 39

Schofield, Thomas J. Mitchel Field, Jan. 3,1940
Sewart, Allen Jackson,Jr. Panama,Oct. 31, 1939
Shedd, Morris H. Panama, Oct. 25, 1939
Smith, Jess Anders, Hamilton Field, June 15,39
Stewart, John P. Hawaiian Dept. June 15, 1939
Thomas, Joseph A. Hawaiian Dept. June 15,1939
Waterman, Paul, Hawaiian Dept. July 1, 1939

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WAR DEPARTMENT SPECIAL ORDERS

Changes of Station: To Hawaiian Department: Major William J. Hanlon (Captain) from Wright Field, sailing about March 18, 1937; 2nd Lieut. Louis W. Proper, from Hamilton Field; 1st Lt. Dale D. Fisher, from Langley Field; Warrant Officer Arthur R. Trabold, from San Antonio Air Depot.

To Langley Field, Va.: 1st Lieut. Harold W. Bowman, from the Philippines.

To Panama Canal Zone: 1st Lieut. Norman B. Olson from Randolph Field; Warrant Officer Vernon L. Roberts, from Kelly Field.

To Bolling Field, D.C.: Captain Howard M. Turner, from Primary Flying School, Randolph Field; 1st Lieut. Jesse Auton from 17th Attack Group, March Field

To Randolph Field, Texas: Major William C. Morris, from duty as Instructor, 37th Division, Ohio National Guard, Cleveland, Ohio.

To Moffett Field, Calif.: Major Bushrod Hoppin, from duty with Organized Reserves, 5th Corps Area, Lunken Field, Ohio.

To Cincinnati, Ohio: Captain Joseph P. Bailey, from Randolph Field, for duty with Organized Reserves, 5th Corps Area, Lunken Airport.

To Coronado, Calif.: Warrant Officer Leland D. Bradshaw, from Hamilton Field, to Rockwell Air Depot.

To Mitchel Field, N.Y.: 1st Lieut. Arthur W. Meehan, from Randolph Field; 1st Lieut. Emmett O'Donnell, Jr., from Selfridge Field.

To Chanute Field, Ill.: 1st Lieut. Carl W. Carlmark from duty as student, Armament Course, Air Corps Technical School, Chanute Field.

To Mitchel Field, N.Y.: 1st Lieut. Dwight Divine, II, from Panama Canal Department.

To Washington, D.C.: 2nd Lieut. John G. Benner, Selfridge Field, to Walter Reed General Hospital for observation and treatment.

RELIEVED FROM ASSIGNMENT TO AIR CORPS: 2nd Lieut. Frederick C. Bothwell, Jr., from Air Corps Training Center, Randolph Field, to 2nd Division, Fort Sam Houston, Texas.

ORDERS REVOKED: Assignment of 1st Lieut. James P. Newberry from Brooks Field to Panama Canal Department; assignment of 1st Lieut. C.H. Rees, Langley Field, to duty as student in Armament Course, Air Corps Technical School, Chanute Field, Ill.

PROMOTION: Captain William L. Boyd to Major (temporary) with rank from December 9, 1936.

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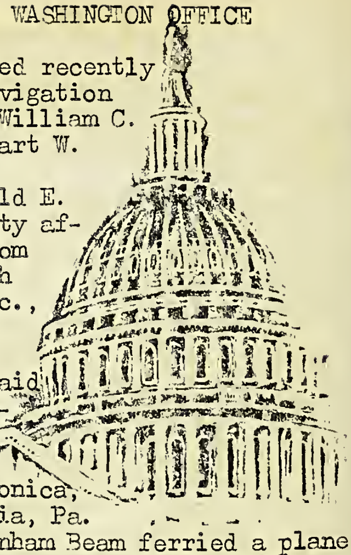
Second Lt. Bierne Lay,Jr., Air Reserve, of Charlottesville,Va., was ordered to active duty for 3 years from January 15, 1937, at Langley Field, Va. For some time past Lieut. Lay has been on the editorial staff of SPORTSMAN PILOT, and some very interesting and well written aviation stories from his facile pen have appeared in this aviation magazine and other periodicals.

NOTES FROM THE WASHINGTON OFFICE



Officers who returned recently from cross-country navigation flights were Colonel William C. McChord; Captain Stewart W. Towle, Jr.

Lieut. Colonel Gerald E. Brower returned to duty after a ferry flight from the plant of the North American Aviation, Inc., Inglewood, Calif., to Atlanta, Ga.

Major Alvan C. Kincaid returned from a ferrying flight from the plant of the Douglas Aircraft Co., Santa Monica, Calif., to Philadelphia, Pa.

Lieut. Colonel Rosenham Beam ferried a plane to Boston, Mass., from the plant of North American Aviation, Inc., Inglewood, Calif. Major Morton H. McKinnon ferried a plane from that factory to Selfridge Field.

Lieut. Colonel Ross G. Hoyt left January 5th to ferry to Boston a plane from the Douglas Aircraft factory, Santa Monica, Calif. Captain Angier H. Foster left January 7th on a ferrying mission similar to that of Col. Hoyt.

Lieut. Colonel Harry H. Young returned from temporary duty at Westfield and Newark, N.J.

Major Alfred W. Marriner, Captains Evers Abbey and Mervin E. Gross returned recently from temporary duty at Wright Field, Ohio.

Major Charles Y. Banfill ferried a plane for the Connecticut National Guard, Hartford, Conn. from the Douglas Aircraft factory.

Officers in the Chief's Office who recently returned from leave were Majors David A. Myers, Karl S. Axtater and Captain James W. Spry.

Recent visitors to the Chief's office during the course of navigation flights or while on leave were Major Harry A. Halverson from the Command and General Staff School, Fort Leavenworth, Kansas; Captain Haynie McCormick from Scott Field, Ill.; Major William W. Welsh and 1st Lieut. George McCoy, Jr., from Maxwell Field, Ala.; 1st Lieut. Paul T. Cullen from Mitchel Field, N.Y.; 1st Lieut. Pearl H. Robey from Wright Field; Captain Howard M. Turner, Randolph Field, and 1st Lieut. Jesse Auton, prior to reporting to duty at Bolling Field, and Colonel Clarence L. Tinker, transferred from Hamilton Field to Washington for duty in the National Guard Bureau.

Major Edward V. Harbeck, Jr., recently returned from an Inspection trip.

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Captain James R. Anderson, Ordnance Department 2nd Lieut. Jack W. Hickman, Corps of Engineers, and 2nd Lieut. John K. Brown, Jr., Field Artillery, were transferred to the Air Corps on December 23, 1936. Upon the completion of their present course of instruction at the Advanced Flying School, Kelly Field, Texas, about February 15, 1937, Captain Anderson will proceed to the Hawaiian Department for duty with the Air Corps, as will Lieut. Hickman, while Lieut. Brown will proceed to Brooks Field, San Antonio Texas, for duty.

FOREIGN OPINIONS ON AVIATION, PRESENT AND FUTURE

From the Italian aeronautical journal "ALA D'ITALIA"
A continuation from the December 15th issue

GIUSEPPE GABRIELLI
of the "Aeronautica d'Italia - Fiat"

Only metals have the vast range of mechanical characteristics which is necessary for materials employed in aeronautical construction. The problems of rigidity, vibration, inderformability and durability are completely solved by metals only. For small and medium planes wood was all right in the past, but the progress attained by modern constructional technics cannot tolerate any longer the use of such material, with which it will never be possible to attain the best ratio between the empty weight and the useful load. Weight is everything in aviation.

In some special constructions the use of wood is quite impossible, that is in the case of small single seaters like fighting and racing planes. Even the change from biplanes to monoplanes (the latter has now nearly conquered the whole field of aeronautical construction) has all the more brought to the fore the necessity of using metal, because monoplane wing problems, particularly when high speed is needed, may only be solved with all-metal wing.

If one looks back at the aeronautical constructions of the past, one can see how wood has been gradually replaced as a consequence of the progress of technics. Several years have been necessary to remove the prejudice in regard to the use of metals. One was the excessive cost. Really this had its origin from the fact that metallic construction was too often realized according to constructive ideas and design derived from the wooden structures. The result was an irrational metallic construction which was too costly. For the same reason metallic constructions were said to be slower than wood construction.

A particularly useful material for aeronautical constructions is duralumin, which alone represents about 90% of the metals employed. In many special cases light aluminum are preferred whilst high resistance steel is useful for stressed structural-welding. Steel is valuable for welded framework, undercarriages and support parts. In the case of civil airplanes, the duralumin is specially useful for the construction of monocoque fuselages, with great advantage over the other types of structures, because it easily allows the interior of the cabin to be lined with thermo-acoustic materials and makes it possible to use the whole volume and lastly is very light.

As regards the wings, the monoplane formula is now indisputed and is applied to the large, medium and small planes as well. The construction of such cantilever wings found its finest solution in the one-piece wing which during 16 years of hard work on the part of technicians all over the world has been more and more perfected. Although today it is nearly perfect, it constitutes for the future one of the largest fields of study which will give more satisfactory results, and emphasize the characteristics of metals.

For all these reasons we can safely say that the aeronautical material of the future is the "duralumin" and that in the always extending and rational use of light aluminum alloys the aeronautical constructions will find the most precious means for progress.

GENERAL ALEXANDER LOHR
Chief of the Austrian Air Force

Experiments of these last years are proving very clearly that fully armed and ammunitioned soldiers can easily be landed by means of parachute. Supplying of advanced patrols with foods and ammunitions has already been accomplished in 1915-1918. During their African campaign in Morocco, the French already practiced it regularly, and it has to be credited to aviation that the Italians succeeded in conquering Abyssinia so quickly owing to the fact that airplanes were able to supply whole arms corps when by no other means this could be done.

It is therefore to be held now as quite possible to send troops to very advanced positions and to supply them by aerial means every time the enemy does not oppose it. In the case of European wars it must be realized, however, that the observation service will generally be able to catch sight in due time of such transports when the objective is far enough and to take the necessary counter-measure. Transport aircrafts, as well as bombers, being often exposed to attacks only during the return trip, it appears necessary that such counter-measures besides the aerial defense with fighter planes have to be helped by anti-aerial artillery.

The landed patrols as soon as down to ground naturally need some time in order to organize themselves and find their way. Should they be caught at this very moment by enemy forces, even small ones, but capable of a quick gathering, the failure of the enterprise is nearly certain. It appears therefore necessary for the future to take defensive measures against aerial infantry such as signal service, lorries ready to start and so on.

More dangerous than aerial infantry seems to be "sabotage" infantry, bold men landed by parachute whose mission is to lay mines, to kindle fires and so on. Results will be greater when plans are drawn up before the war and men fully trained for such particular task.

A matter of outstanding importance will be the landing of troops in the battlefield itself. In some particular spots of it, signal service and other communications may be wrecked or not yet ready and consequently the defence by fighters and anti-aerial artillery out of efficiency. In such case there will be very favorable conditions for a surprise from the sky. If the aggressor is also favored by land's configuration and weather conditions, aerial infantry can easily be successful, by destroying communications in the back-lines and so paralyzing the action of headquarters. Sometimes the attack could also be struck from back and sides with better results than can be expected judging only from the sheer number of soldiers involved.

It is consequently my opinion that aerial infantry, although not to be considered as a decisive factor, is nevertheless a quite remarkable novelty in the art of the war.

C. WIESELBERGER
Director, Aerodynamic Institute, Aachen University

Is it possible to reach a stalling to top speed ratio in the order of 1 to 10?

I am firmly convinced that in the next five or ten years, the actual range from stalling to top speed will be increased, but it is also my opinion that better result can only be obtained, at least for some years more, by using the lifting power of horizontal propellers and by further developments of helicopters and autogiros. For the latter particular type of aircraft there are only some particular problems of construction and stability left to solve and the solution is only a matter of a few years.

I do not believe that standard airplanes will reach very low landing speed (let us say 10 to 20 kms. p.h.) owing to the fact that fixed wings will not give at such speed a sufficient and efficient lift.

WOLFANG VON GRONAU
President, Aero Club of Germany

Prototype machines are now being tried which reach the speed of 500 kilometers an hour. The quickest has even done more than 700 kilometers an hour. Why could these results not be obtained with standard equipment aircraft? There are two problems that have to be solved first. First of all there is that of landing. It is difficult to reduce such speeds so as to be able to land slowly in such a little space as that required by some aerodromes, and with safety for the passengers. Military use of damaged airdromes or those of limited space should also be taken into consideration. The present speed of landing should not be increased in any case, even if navigation speed should be increased. Although there are no irremovable difficulties connected with this problem, it does not seem to be very easy to solve. Wind tunnel experiments in which the air current was made visible by smoke have shown that it is still possible to increase the ratio between the highest and lowest speeds.

The second problem, which will undoubtedly be solved gradually, is that of the driving power and of fuel consumption. The prototypes now under test have engines which, on account of their measure and weight, are out of proportion with the size of the body and they do not last long enough owing to their lightness. The foregoing holds good for the fuel quantity required, which is excessive in comparison with the load capacity of the craft. One could nevertheless reach a considerable flying range even with increased power of the engines, provided that their weight and specific consumption of fuel do not increase. In this way the highest speed obtained will not cost more. On the other hand, this is the condition against which the speed of the present prototypes can be utilized practically.

For several reasons I do not think that airplanes with movable wings will come into use in the near future. The lifting propellers and similar constructions are so complicated and in their revolving parts they are exposed to such wear and tear that in the present state of technics it is impossible to build them for trials of some importance. Even the flying windmill has not been able to get a big market for itself on account of the high cost of its too reduced load capacity and a lower speed than that of airplanes with equal power and fixed wings. Since the flying windmill is also extremely sensitive to overloads, it is not even free from danger and many accidents have already happened on account of this fact. On the other hand, with the aid of slot wings, aerodynamic brakes and other devices of that kind, it has been possible to obtain a reduced starting and landing speed for ordinary airplanes, which is sufficient for nearly all cases. This accomplishment together with the marked advantages offered by the airplane make investigations in the field of movable wings seem to be less urgent.

According to my opinion the use of airships for transoceanic services will have further developments, seeing that they can carry a larger number of passengers than airplanes and can offer them more comfort. Passengers will reserve their preference for airships over airplanes on account of the time saved in the voyages with transatlantic craft. On the other hand, I do not think that airships will be used for military purposes as their extreme vulnerability would make them a too easy prey for the airplanes.

ARTURO G. CROCCO
OF THE ITALIAN ACADEMY

The Volta Congress has confirmed the scission of the problems of flying speed in three fields, of which the first reaches about 800 Kms. p.h.; the second range between 800 and 1200 Kms. p.h., and comprises the speed of sound in the atmosphere, and the third goes beyond 1200 Kms. p.h. (Please take notice of the graphic). These three zones can be shown in the graphic by taking as an index the drag-coefficient of a body having a certain form (f. in. an airplane fuselage). The Congress has called them scientifically sub-sonorous, sonorous and ultra sonorous speed. I will use instead more expressive technical terms by naming the first one "aeronautical" and the third one "ballistic." In fact, the aeronautical speeds have in the "Avis" term their natural progenitor, as their technics in the modern airplanes are now following the bird features. This is true not only of their esthetic aspect, but also of the fundamental aerodynamic particular which is that of frontal rounded wings and bodies. It may be foreseen that this particular form will remain the main characteristic of aircraft as far as the drag-coefficient remains constant, that is, up to the highest limit that can be reached, before the problems of speed can be noticed. On the contrary, the "Ballistic" speed,which has already been reached by artillery but not yet by flying men, will compel us to give up this form only to follow the direction of the new theories which were adopted by the Volta Congress, and which require sharp frontal forms, like the ships' prow or like the form of modern bombs.

And ballistic flight's wing have been compared at the Congress to blades. Not only aerodynamical basis but also the principles of propulsion and power will have to change if we want to reach ballistic-flight. New technical principles will have to be realized for propulsive apparatus and for engines. This change will not be a gradual evolution but a revolution.

Where will this ballistic- flight be possible? Of course in rarefied air. The connection between high speed and rarefied air is imposed by the problem of power and by exigencies of take-off and landing which both require low speeds. Perhaps ballistic flight will extend to the ozonesphere, where electrodynamic phenomenons which are characteristic of great rarefaction could help in supporting the airplane. Anyway, since the main obstacle to ballistic speeds is the air, we are justified in thinking of rarefying it as much as possible. This revolutionary characteristic of the probable new human conquest leads to believe that the result of present investigations are only isolated elements of a potential nature. They can be neither reckoned nor measured until a new idea will be born which will associate and value them altogether. Thus at Guidonia, in the stratospheric channel, aerodynamic ballistic is studied. In the General Aerodynamic Laboratory of our Engineer's School of Rome, stratospheric energy is explored. At the flying field of Montecelio, special devices for human respiration in the vacuum are experimented.

Let us leave the field of ballistic speed which is still unexplored. Let us consider the field of aeronautical speed. Practically aeronautical speed reaches a limit a little over 800 kms. p.h. The unbeaten record of Lt.Agello at Desenzano has covered the largest part of such field by surpassing 700 kms. p.h. We have come, therefore, very near the point where drag coefficient abruptly increases and lift coefficient decreases. Within this limit there is still a large margin for common aircrafts, as the question is to double the present speed of civil and military airplanes. The problems here are no more of an aerodynamic but of a constructive nature; such as improving the streamlining, applying more powerful engines and above all, providing for new cooling system. All these problems are now known and it is of little importance to investigate whether the land plane will be in more or less advantageous conditions compared with the seaplane to improve the present speed. Researches will proceed gradually but unceasingly. Therefore, if ballistic-flight is only a future eventuality and Agello's flight is only an anticipation, the continuous improvement of standard airplane speed, together with the capacity of heavy useful load, is now quite tangible.

Unfortunately the race to armaments polarized all aviation development in the military field. While some nations tear themselves to pieces within their borders, while savage man's instinct menaces to destroy civilization and while the instinctive barbarity breaks all bounds of law and religion, the most sane and poised people are forming an alliance between themselves in order to defend their existence and the existence of humanity. During these troubled times the progress of great inventions becomes more rapid, but its characters are deeply modified, especially in the field of scientific ideals. Science becomes positive. Speculative enquiry yields to realism. One does not sow but harvest; one does not look at the future but at the imminent. The daily diffusion of cultural news is veiled with reticence, and all activities are masked with the military secret. * * Progress needs peace in order to materialize. We no more live in the times of Archimede who pursued its theorem within his own brain while Romans were sacking Syracuse. Today, the brain needs laboratories, experimental plants, workshops, raw materials, energy, cooperation. All this cannot exist without a great security within the borders and on the sky, or without a firm discipline among the people or without a leading and strong will power.

UMBERTO SAVOIA AND CELESTINO ROSATELLI
of the "Aeronautica d'Italia Fiat"

Civil and military aviation is now pegged with its series material on a standard near to 300 kilometres an hour. What problems must be solved before the standard of 500 kilometres can be passed on to, which has now been clearly announced by most recent experimental prototypes machines?

There is no difficulty in stating that the speed of 500 kilometres can be reached in the near future as a normal standard for some particular civil airplanes and for some special services. This will not be very easy, however, especially if comfort and safety are not to be sacrificed. Further improvements of the streamlining is required, which can be summed up as follows in regard to the fuselage:

1. Reduction of all harmful spaces and therefore the chief section, and better retractability of the landing gear, the tail wheel, the wireless antennas, etc.
2. Generalization of instrument-flight and further reduction of the present wind screen.
3. Increase of smoothness of the covering surfaces with the use of suitable varnishes and introduction of nails with hidden heads.

The ideas of paragraph 1 are the most important because with them it is possible to obtain an increase of speed which, according to the latest hopes, can reach 25%. With reference to the body, improvements of the aerofoils can be taken into consideration too, and the use of higher wing-loading in connection with the spreading of super-lifting devices. There is no exaggeration in foreseeing that when all means are turned to and without worrying too much about the cost, a fineness in all the airplane can be reached of about 35% more than that which is usually reached now, since as matters stand at present, civil twin-engined airplanes could exist with 2000 h.p., capable of reaching 430 kilometers at an altitude of 4000 meters, and the saving mentioned above would become an increase of about 10%. The specific power of the engines has not yet been mentioned however. In this regard the greatest obstacle for increase of power is represented by cooling. A reduction of the surface required for the radiators would be obtained if the problem of engines cooled with liquid at 130-135 degrees could be resolved. An increase of power would not, therefore, mean an increase of drag with a result amounting to next to nothing. Five hundred kilometers an hour could then be reached easily and perhaps exceeded.

Do you think that regular air navigation in a near future, within fifteen or twenty years from now for instance, will get near to navigation altitudes close to the world's record?

The problem of flying at stratospheric altitudes with the exception of record flights has difficulties which can now be described as insurmountable. The integral high altitude engine has still to become an accomplished fact, namely, to be capable of giving a constant power for all the altitude on account of technical reasons concerning supercharging and cooling. In spite of the very low temperature and the great speed of the aircraft, cooling of the engines at altitude is almost out of the question on account of the lower density of the air, and if architecture is not to be radically changed. This would mean making it cumbersome and therefore harmful for the purposes of good penetration which is being looked for with altitude. And the supercharger which should establish the same pressure at 10,000 meters as on land, would cause such an enormous heating of the air as to become an obstacle for the engine's working.

Leaving aside the problems of the engines, of the propellers and of the support, there is another with much greater difficulties, namely, if it is possible to live in the aircraft. It is true that like Jules Verne, it is not difficult to think about hermetically closed cabins and supplied with air from suitable compressors, but the problem of flight is first of all a problem of weight, and nobody stops to dwell on the insurmountable difficulties to be met with on this path. The cabin would have to be completely air-tight and be able to hold out against working pressures from the inside to the outside of about 7000 Kg. per square meter. Further, all the problems exist in regard to the passage of the control-cables and not on account of the difficulty in itself, but owing to the enormous burdens of weight they bring about. It is quite out of place, however, to proceed any further with the examination as there is nothing else to be done but to come to the conclusion that flights at very high altitudes will remain for a long time in the field of sport without useful, practical and safe applications.

Ed. Note: This concludes the quotations made of special articles on various aspects of aviation, present and future, which appeared in the first international issue of the Italian aviation journal L'ALA D'ITALIA, published recently. These articles were printed in five different languages, namely, Italian, Englis h, French, Spanish and German. One reading these articles - the contributions of eminent men prominent in aviation affairs - cannot fail but be impressed by the serious thought and deep study which the subject of aviation is receiving in countries beyond our borders.

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35TH DIVISION AVIATION HAS NEW OFFICERS' CLUB

Officers of the 35th Division Aviation, Missouri National Guard, invite with no little pride Air Corps personnel and others connected with aviation to visit the new officers' club, located in the new addition to the hangar building at Lambert-St. Louis Municipal Airport, Robertson, Mo.

The club room has been decorated in unique style. The walls are covered with photo murals consisting of inter-related aviation subjects. The murals over the fireplace depict the first flight of the Wright Brothers at Kitty Hawk, and was made from the original picture autographed by Orville Wright. A beamed ceiling is paneled with paintings of 148 Air Corps insignias, including foreign insignias in addition to those representing Air Corps and National Guard organizations.

The pride and joy of the Missouri airmen is a bronzed frieze, 10½ feet long, 30 inches high, into which are modeled portrait likenesses of the officer personnel of the Squadron at the time Lieut. Colonel P.R. Love was leaving to assume his new duties as Division Air Officer. This was hung in a most appropriate place in the clubroom. A bust figure of Colonel Love is in the center and is surrounded by seventeen other heads arranged against a background of sky filled in minute detail with various types of planes, clouds, and landscape. The frieze was obtained by the Squadron through its friendship with Mr. E.A. Siebert, a St. Louis sculptor, who executed the bas-relief and presented it to the organization.

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INSTRUMENT REPAIR BUILDING FOR HAWAIIAN DEPOT

Construction has started on a new Instrument Repair Building for the Hawaiian Air Depot. The structure will be 22 feet by 55 feet. This additional unit has been badly needed for some time. In the past it has been necessary to send a large number of instruments to the mainland for overhaul. With the addition of this new building, however, all this work will be accomplished locally. The building has been especially designed for this work. Double walls will be provided to prevent the entry of dust, dirt and other foreign matter from the exterior. All air entering the building will be filtered through a ventilating system.

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The 23rd Bombardment Squadron, Luke Field, T.H., lost one of its Staff Sergeants, John Zane, who died at Tripler General Hospital on the morning of November 19th. Sergeant Zane was well liked in the Squadron and was a competent noncommissioned officer.

AIR CORPS
— NEWS LETTER —

ISSUED BY
OFFICE OF THE CHIEF OF THE AIR CORPS
WAR DEPARTMENT
WASHINGTON

VOL. XX FEB. 1. 1937 NO. 3

NEWS LETTER

VOL. XX NO. 3

Information Division
Air Corps

February 1, 1937

Munitions Building
Washington, D.C.

The chief purpose of this publication is to distribute information on aeronautics to the flying personnel in the Regular Army, Reserve Corps, National Guard, and others connected with aviation.

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STUDENT TRAINING AT THE AIR CORPS TRAINING CENTER

By Captain J.B. Burwell, Air Corps

It seems to be a universal custom among graduates of any institution to regard their diploma as a permanent license to return to their Alma Mater ad lib, shake their graying heads filled with reminiscences and cry in despair that "the place has gone to hell."

A group of old graduates of the vintage of about '99 returned to a certain eastern college in the early 20's to discover that the students no longer had to thaw out the single spigot in the yard and await their turn to fill a bucket with cold water, dash back to their rooms and perform their morning ablutions. Instead, the spigot had been moved into the building to prevent its freezing and make it more accessible. The undergraduates who snickered at that tirade over an obvious improvement were themselves destined to return a few years later, discover the spigots moved into each room, which change prompted them to join the older graduates in the usual doleful dirge, for another improvement had been made.

Fortunately, such remarks are usually prompted by the old graduate's sincere interest in the institution and a desire to be shown that any changes made since his regime have actually been beneficial and produced favorable results.

In addition to giving the older officer an excuse to reminisce and the younger ones a brief description of the old system of training, these remarks are intended to show that student training has made steady progress.

Classes entering the Primary Flying School at Brooks Field between March, 1924, and March, 1927, inclusive, were trained under the "A" plan. They spent six months at the Primary Flying School, receiving approximately 75 hours of primary instruction and practice, and then moved to the Advanced Flying School at Kelly Field, where they spent another six months' period and received approximately 125 hours' instruction. Their primary instruction was very similar to that given today, but their basic instruction began at the Advanced Flying School and was given under the stage system. After a student once soloed on DH's, he had no regular instructor but progressed from stage to stage, being careful to avoid unoccupied check pilots, until he had completed the twelve weeks' basic course. About ten weeks of specialized training then followed.

Students soon learned to pull the prop through and get the retreating portion of their anatomy out of the way of the hungry propeller which was always greedy for a slice of steak. What little night flying the student received was quite different from such flying as practiced today. A few hops around the field and perhaps a short cross-country sufficed. He had no flares such as are dropped today, but a kind of burning torch under each wing, which, in case of emergency, were ignited from the cockpit. If they burned at all, they were liable to catch the wing on fire as well. When he approached the field for a landing, he found an old war-time truck chugging away in an effort to maintain a flickering beam from an antiquated searchlight.

Almost everyone believed that a pilot flew "with the seat of his pants" and was equally convinced that this could be done in bad weather as well as in good weather. When he graduated, a student had a total of approximately 200 hours' flying time, but knew nothing of instrument flying, radio beam work, or many of the other phases taught today. Even so, he was regarded as being one of the best trained pilots in the world, and it was not unusual, near graduation time, to see representatives of commercial lines on the field offering students who were about to graduate contracts calling for three or four times the rate of pay they were to receive in the Army.

After the passage of the Air Corps Act of 1926, a five-year program was placed into effect to graduate and commission more students without lowering the standard of the School. The Training Center was organized about that time, the "B" plan of training placed into effect, and only shortly afterward the first class entered March Field in November of 1927. Under this plan, training methods were improved, additions made to the curriculum, the percentage of graduates increased, and plans formulated to further improve the system.

The last major change occurred in 1931, when all primary and basic instruction was moved to Randolph Field, and Brooks and March Fields were discontinued as schools. This change has also produced satisfactory results, and other improvements have continually been made. The "B" plan calls for four months of primary and four months of basic instruction at Randolph Field, followed by four months of advanced training at Kelly Field.

When a student graduates today he has received approximately 330 hours of instruction and practice in the air. He is an accomplished instrument pilot as judged by the standard required of all pilots in the Air Corps. He is a better formation flyer, navigator, night flyer and all-round pilot when he graduates than the "old grad" was. He is qualified and capable of readily assuming the duties of pilot of any type airplane now in the Air Corps with but a short period to acquaint himself with the airplane, and is ready to absorb the latest ideas on tactical employment.

The problem of graduating a higher percentage of students has been given serious study, and the following plans have been considered.

If the course were lengthened without increasing the number of hours of instruction, the students would have more time and could, if necessary, be given more instruction in any one phase of training. This has been tried, and it was found that of those students who were unable to progress with the rest of the class a smaller percentage could complete the course even with additional instruction than is the case with new and inexperienced students. This method does not produce results in proportion to the additional cost of training.

If the entrance requirements were raised, the percentage of graduates would undoubtedly be increased. By more rigid mental examinations practically all of the academic failures could be eliminated, and by more rigid physical requirements, most of the physical disqualifications could be avoided. During recent years, over one hundred students have been eliminated from the Primary Flying School alone for physical disqualifications. If preliminary flying instruction at another station in the vicinity of the applicant's home were given each candidate and only those who showed aptitude sent to the School, as is at present done by the Navy, a large percentage of eliminations for flying would be avoided. Under these conditions it would be possible to graduate and rate as airplane pilots a much higher percentage of those entering the Primary Flying School.

The question of lowering the standard of the School in order to increase its output has been advocated by some and has been under continual study. Experience has proven that work done in the School by a student is a direct indication of what he will do when he joins another unit. Weak students are almost invariably unsatisfactory pilots in other organizations.

Transferring a man from the School to a tactical or other organization will not change his personal characteristics, his judgment, his ability to think or his coordination. The young flying instructors at the School are in general fresh from tactical units, where they have been leading elements, flights and squadrons in carrying on the tactical training of combat units. They know the type and scope of the flying required of the young graduate in the tactical units in carrying out their missions and whether or not their students can be brought up to a standard to meet those demands.

The Training Center is desirous of fulfilling whatever mission might be assigned to it and has constantly studied and frequently made recommendations with a view to improving the system of training. For example, some two years ago a plan was submitted whereby students would not only be pilots qualified in instrument flying, radio work, formation, navigation, night flying, et cetera, but would also have some knowledge of the tactical employment of aircraft and be proficient in gunnery and bombing. Another study has recently been completed and recommendations made to improve the all-round piloting ability of the graduates without lengthening the course.

The Training Center could arbitrarily graduate any percentage of students indicated by proper authority. For example, if it were placed at 95%, this could be done by simply selecting the ninety-five best students out of each hundred and graduating them. If this were done, however, tactical and other units would soon have a number of pilots incapable of complying with the War Department and Air Corps Training Directives, and, unless the missions assigned to these pilots were restricted to certain types of flying that they might be able to perform, they would soon eliminate themselves as well as other personnel by their inability to fly.

Briefly, the mission of the Training Center has been considered to be the training of a sufficient number of pilots who are capable of assuming the duties of a junior officer in the Air Corps. As to the first part of this mission concerning the number of graduates, let us consider only the period since the passage of the Air Corps Act of 1926. From that time until the present day, the Training Center has graduated 2,287 rated pilots. Of this number only 23 were foreign officers and only 22 were enlisted men training in grade. Thus, 516 commissioned officers and 1,726 flying cadets have been graduated as rated airplane pilots. Had the proper number of these graduates been commissioned in the Air Corps and been put on extended active duty as Reserve officers, the Air Corps would be up to its strength today; that is, 1,650 Regular officers and 550 Reserve officers on extended active duty, as authorized by the Act Corps Act of July 2, 1926. As to the second part of the mission, the graduates themselves are demonstrating in the Service every day that they are capable of performing the duties of a junior officer in the Air Corps.

The following comparisons will illustrate some of the improvements effected in the Training Center. Under the "A" plan of training less than one student in five who entered the Primary Flying School graduated from the Advanced Flying School and received the rating of airplane pilot. From the time the "B" plan was placed into effect until July, 1931, approximately one student in three was graduated and rated. Since the primary training has been conducted at Randolph Field, almost one out of every two students has completed the course and received the rating of airplane pilot. Although the course has been of the same duration during each period discussed, the amount of actual flying training has been increased more than 60%, nearly three times the percentage of students are now being graduated and every graduate is a much better qualified pilot. During the past nine years, or twenty six classes, only eight students, or about one-third of one percent (1/3 of 1%) were eliminated at the Advanced Flying School for failure to make satisfactory progress in flying training.

The Training Center personnel are not completely satisfied with the results obtained today. Just as "the best race hasn't been run yet," it is more than likely that no one has yet discovered the "best" method of doing anything. Improvements will undoubtedly be made in the future. Any reasonable recommendation or suggestion toward this end is always welcome.

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WHY? WE'LL BITE

The Materiel Division Correspondent states that recently two reports have come to the attention of the Power Plant Branch which are at this writing unexplained.

The first: Lieut. Ben Kelsey, returning to Wright Field one night in a Martin B-10B, had reached the vicinity of Columbus, Ohio, when the left engine quit "as though the switches were cut." After some gas valve and ignition switch manipulating, the engine started up with the gas valve in the "off" position, gasoline flowing freely from the exhaust pipe. On starting, the flames ignited the gasoline on the wing, which also ignited the fabric rear portion of the wing. The engine then began to operate normally and, after deciding against taking a chance on the Columbus Airport fire figatin facilities, Lieut. Kelsey raced the fire to Wright Field. A few inches from the aileron the fire lost, and Lieut. Kelsey, after a few practice cloud landings, shot a "hot" flapless landing successfully at Wright Field with only a little more than half the left wing surface remaining. When asked why he didn't jump, he answered: "I had an electric train in the back for the boy."

The other report was very similar except that the cloth portion of the wing did not ignite. However, the paint was damaged.

Major S.M. Connell, also in a Martin with engine installation identical with Lieut. Kelsey's, was flying in the vicinity of Warrenton, N.C., when the right engine quit and flooded. When the fire broke out, the passenger was told to jump. Major Connell landed the plane safely.

In both of these cases the gas valve had been changed a few minutes prior, but not immediately before the incident. Attempts to duplicate the trouble by flooding the carburetor have proved unsuccessful. No faulty mechanism has been found in either installation. Cross-feed valves were open in both cases so that a by-pass valve failure should have flooded both engines. Lieut. Kelsey's left engine, Major Connell's right.

The Power Plant Branch will be satisfied when it gets its engines to work as well as the cockpits were working in these two cases. A prompt solution is hoped for by the Power Plant Branch as a result of the detailed study of the matter which is now being made.

KELLY FIELD STUDENTS FLY TO UNIVERSITIES

Aviation training flights of Kelly Field students may be routed to points in Alabama, Georgia and Louisiana, where universities are located, instead of following the usual route touching Fort Sill, Oklahoma, and Fort Bliss, Texas.

Major Robert D. Knapp, Director of Flying Training at the Advanced Flying School, Kelly Field, left recently by plane to visit the University of Alabama at Tuscaloosa, Ala.; the University of Georgia, Athens, Ga.; Alabama Polytechnic Institute, Auburn, Ala.; Louisiana State University at Baton Rouge, La., and the Georgia School of Technology.

The announced purpose of his trip was to investigate the practicability of having the students of the Advanced Flying School fly over a route which will take in the four universities along with a number of others in the southern part of the country. Such flights to university cities would create among the students in the schools more interest in the Air Corps and would give them the opportunity to see the flights and inspect the planes. Major Knapp will determine whether facilities are available at these places for the proposed flights.

Each class at Kelly Field must, before graduating, go on a 4-day routine navigation training flight, one day of which is devoted by the students to performing the necessary daily check and maintenance of the planes they use. The usual route has been to Fort Sill and Fort Bliss and return.

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CADET APPOINTMENTS FOR ENLISTED MEN

Six enlisted men of the Air Corps and two enlisted men from other branches of the military service are under orders to proceed to Randolph Field, Texas, and report to the Commandant of the Air Corps Primary Flying School on March 1, 1937, for appointment as flying cadets and assignment to the March, 1937, class, viz:

Private William C. Clark, Base Hq. & 14th Air Base Squadron, Bolling Field, D.C.

Private Melvin J. Richardson, Hq. and Hq. Sq., A.C. Technical School, Chanute Field, Ill.

Privates J.C. Bailey, Jr. and Glen W. Raker, 46th School Squadron, Randolph Field, Texas.

Private Homer C. Payne, 5th Air Base Squadron, Hamilton Field, Calif.

Private Thomas F. Carolan, 19th Airship Squadron, Moffett Field, Calif.

Private Frank J. Anneberg, Station Hospital, Fort Leavenworth, Kansas.

Private, 1st Class, Arthur G. Pinkham, 3rd Signal Service Company, Det. Hq. Co., 13th Infantry, Fort Devens, Mass.

INSTRUCTION IN "ARTILLERY MISSIONS."

The students of the Observation Section at the Air Corps Advanced Flying School, Kelly Field, Texas, are now receiving instruction in one of their most important phases of training - "Artillery Missions." This training is being conducted at Camp Stanley, Texas. A Battery (Battery "C") from the 12th Field Artillery, commanded by Captain W.E. Waters, is being used so that students may observe the actual firing from the air as well as the adjustment work. Eight days are being devoted to this phase. Captain Russell E. Randall, the Ground School instructor in Artillery Missions, is also in charge of the Camp Stanley training.

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RADIO COMMUNICATION AT BROOKS FIELD

Brooks Field, San Antonio, Texas, is very proud of their new radio installation which has recently been completed. This installation is in the office of the Operations Officer. It is complete with transmitter, receiver, and numerous other aids and gadgets which make it an excellent model for any radio station. It enables the Operations Officer to keep in touch with personnel performing any missions.

"In a recent test," says the Brooks Field Correspondent, "our new C-33 Transport went to Timpas, Colorado, to take some parts for an O-43A which had been forced down at that place. Constant communication was kept with the plane throughout the trip, and we feel that this is something for which we can be pardoned in exhibiting great pride. We feel that we are now well in the fore with regard to the radio world."

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A TOUCH OF WINTER IN SUNNY CALIFORNIA

"On a flight above the San Francisco Bay on January 5th in a BT-9," reports the News Letter Correspondent of the Air Corps Reserve activity at Municipal Airport, Oakland, Calif., "the pilot and observer blinked their eyes, rubbed their heads and finally decided that they had not fallen asleep. After a lengthy conference over the interphone and much peering through the cockpit enclosure, they agreed that it was snowing. The little BT-9 picked up her skirts and ran for quite a way before finding a quiet place under a shivering palm."

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Captain H.R. Yeager, 1st Lieuts. S.E. Anderson, W.L. Kennedy and 2nd Lt. C.M. Sartain recently ferried four O-25's to Rockwell Field, Calif., and returned to Kelly Field with four P-12's which will be used at the Advanced Flying School.

MAJOR LYNCH AND SERGEANT MURRAY SELECTED FOR CHENEY AWARD

For performing an act of valor and self-sacrifice worthy of the highest commendation, the Board of Air Corps officers appointed to select the person or persons deemed most worthy of receiving the Cheney Award for the year 1936, decided that this honor should go jointly to Major Frederick D. Lynch, Air Corps, and Staff Sergeant Joseph L. Murray, 1st Balloon Squadron, Air Corps.

The Board, which was composed of Cols. Rush B. Lincoln, William C. McChord, Lieut. Colonel Vincent B. Dixon, Majors George L. Usher and Edward W. Raley, Air Corps, while having before it the names of a number of Air Corps officers and men who during the past year performed acts of bravery involving risk of life, considered that the courageous conduct of Major Lynch and Staff Sergeant Murray constituted the most outstanding and meritorious act performed by any individuals eligible to receive the Cheney Award for 1936.

Major Lynch was a passenger in a free balloon which took off from Fort Sill, Okla., at 9:40 a.m., July 10, 1936, and which was piloted by Staff Sergeant Murray, whose aide was Master Sergeant Ralph J. Rumpel. Staff Sergeant Douglas M. Tucker was the fourth occupant of the balloon. The aeronauts had been in the air about three hours and 35 minutes and were traveling north, rapidly approaching the South Canadian River. Sergeant Murray decided not to cross the river, there being very few bridges and the truck following them would have had difficulty in finding them. He was preparing to land on a clear space he had observed from a high altitude and, after indicating his intentions to the men in the truck, he explained to his passengers and aide what he planned to do. The country at this particular place is very rough, and most of the hills are covered with scrub timber.

As they were flying over a valley between two hills, the balloon started to descend rapidly. Sergeant Murray immediately dropped all the ballast he thought he could afford and believed sufficient to raise the balloon over the next hill. He had used much ballast during the course of the flight in attempting to maintain the altitude decided upon before starting the flight. As the balloon approached the top of this hill, it again descended and hit the ground very hard. More ballast was released and the balloon was raised enough to clear the trees and it started traveling north along the ridge of the hill. The ballast was nearly gone by this time and what was left was barely sufficient to make a landing.

The balloon was oscillating badly at this time, but no one was alarmed and Sergeant Murray felt confident he could make a safe landing in a small clearing immediately ahead. Approaching this clearing, he started to valve the gas, and the balloon with basket still oscillating, descended slowly toward the ground. Immediately before hitting the ground, the basket seemed to stick in the underbrush.

Warning all members of the flight to remain in the basket, the pilot, with another member of the flight, pulled the rip-cord to release gas from the balloon. There was an explosion at that time and the basket turned over. It was only a matter of seconds before the entire area was a mass of flames. Major Lynch was thrown clear of the basket by the explosion. Sergeant Murray was caught in the rigging by his parachute.

Major Lynch, with utter disregard for his own safety and despite the fact that he was suffering from burns, bruises and shock, returned to the balloon basket, plunged into the wreckage, where the heat from the burning balloon and hydrogen gas was most intense, and dragged Sergeant Murray from the burning basket. Then they both ran to Sergeant Tucker, who was rolling on the ground and whose clothing and chute were on fire. They attempted to put out the fire and cut his clothes from him.

By this time several natives arrived on the scene. One of them suggested throwing dirt on Sergeant Tucker, which was done. Then Sergeant Murray lost consciousness and was placed under a nearby tree. One of the natives assisted Major Lynch in finishing the job of cutting the clothing from Sergeant Tucker. He then issued instructions to get Sergeant Rumpel out of the fire if that was possible. When the latter was removed from the ruins, he was dead. Both Sergeants Murray and Tucker were severely burned, and were taken to a hospital at Anadarko, Oklahoma. Sergeant Tucker subsecuently died as the result of his injuries.

The Cheney Award which will be presented to Major Lynch and Staff Sergeant Murray was established in 1927, in memory of 1st Lieut. William H. Cheney, Air Service, who lost his life in an air collision at Foggia, Italy, on January 20, 1918. The donors of the award are Mrs. Mary L. Schofield, the mother of the deceased war-time flyer, and her daughter, Mrs. Thomas W. (Ruth Cheney) Streeter. They have jointly set aside a trust fund of $15,000, the interest accruing therefrom to be used to make the award, which is bestowed annually by the Chief of the Air Corps for an act of valor, or of extreme fortitude or self-sacrifice in a humanitarian interest, not necessarily of a military nature, but which shall have been performed in connection with aircraft. Those eligible to receive the award are officers of the Air Corps and Air Reserve and enlisted men of the Air Corps and Air Reserve and, in the event of a posthumous award, the widow or next of kin.

A bronze plaque is struck off yearly, the name of the recipient or recipients engraved thereon, and the memento is presented together with an engraved certificate describing the act of valor performed, and either a sum of money or a suitable gift, as designated by the Cheney Award Board. Although the income from the trust fund exceeds $500 per annum, the balance is placed in a sinking fund for possible use in the event more than a single individual is recommended for the award, as is the case in the award for 1936.

The first presentation of the Cheney Award was made in 1927 to Master Sergeant Harry Chapman, Air Corps, for conspicuous bravery in the airship ROMA disaster, February 21, 1922. Captain Uzal G. Ent, Air Corps, was presented the Award for 1928 for heroism during the National Elimination Balloon Race, when he rode down a burning balloon, struck by lightning, in an attempt to save his companion, the late Lieut. Paul Evert.

Captain William A. Matheny was tendered the Award for 1929 for the rescue of a companion, Lieut. Dwight Canfield, from the burning wreckage of their bombing plane which had crashed in the Nicaraguan jungles while enroute to Panama. No awards were made for the years 1930 and 1934.

For 1931, 1st Lieut. Robert D. Moor received the Award posthumously for his piloting of an airplane, disabled in an air collision, for a length of time sufficient for his passenger to save himself by a parachute jump. It was then too late for him to resort to this means of escape. Private John B. Smith also received the Award for that year for the rescue of the pilot of a wrecked and burning airplane in which he had been a passenger.

For 1932, Private Arden M. Farley received the Award for the rescue of Lieut. William H. Dum from a wrecked and burning airplane.

Lieut. W. L. Bogen, Staff Sgt. Doy D. Dodd and Sergeant Thomas J. Rogers jointly received the Award for 1933 for acts of valor during the rescue of two men trapped in a burning airplane.

The late Lieut. Robert K. Giovannoli received the Award for 1935 in recognition of his extreme bravery in the rescue of two men from a burning airplane which had crashed during a test flight. Lieut. Giovannoli lost his life in an airplane accident before the actual presentation of the Cheney Award to him.

Unfortunately, also, Lieut. Bogen lost his life last December while flying as co-pilot of a Western Air Express plane, which crashed during a fog.

MAJOR FREDERICK D. LYNCH

Major Frederick D. Lynch, Air Corps, now on duty with Air Corps troops at Fort Sill, Okla., was born on March 11, 1893, at Chicago, Ill.

He attended grammar school at Ottumwa, Iowa; high school at St. Louis, Mo., and graduated from Washington University of that city in 1915. For nearly three years he followed the profession of an accountant in civil life. During the World War he enlisted in the Field Artillery, Illinois National Guard, which was subsequently mustered into the Federal service. Shortly thereafter, he was transferred to the Aviation Section, Signal Corps, and after graduating from the School of Military Aeronautics, Texas State University, Austin, Texas, he was transferred to Kelly Field, Texas, for his flying training.

Qualifying as a Reserve Military Aviator, he was commissioned a second lieutenant on May 24, 1918, and assigned to active duty at Chanute Field, Rantoul, Ill. After further flying training at Chanute Field for several months and for a brief period at Langley Field, Va., he completed the course of instruction at the School of Aerial Gunnery at Taliaferro Field, Fort Worth, Texas, and was then ordered to duty overseas.

Following gunnery training at the Aerial Gunnery School at St. Maxient, France, and advanced flying training at the 2nd Aviation Instruction Center, he was assigned to duty as an observation pilot in the Zone of Advance. Following the Armistice, Major Lynch served as a member of the First Aero Squadron with the American Army of Occupation in Germany.

Honorably discharged from the service on August 20, 1919, Major Lynch, after passing the examination for appointment in the Air Service, Regular Army, was commissioned a second lieutenant, July 1, 1920. He received a refresher course of flying training at the Primary Flying School at Carlstrom Field, Arcadia, Fla., graduating from that school in April, 1921, following which he took advanced training as a Bombardment pilot at the Advanced Flying School at Kelly Field, Texas. He was rated an "Airplane Pilot," August 4, 1921, and remained at Kelly Field on duty as Supply Officer, 11th Bombardment Squadron, until February 25, 1922, when he was transferred to the Philippines, where he performed various duties at Kindley Field, Fort Mills, P.I.

Following his return to the United States, Major Lynch was assigned as a student and pursued a communications course at the Air Corps Technical School at Chanute Field, Ill. He then pursued a one-year course in communications at the Sheffield Scientific School, Yale University, and upon completing the course returned to Chanute Field, where he served as an instructor in communications until

November 18, 1929. He was then transferred to Kelly Field, where he served for ten months, mostly in the capacity of communications officer of the Advanced Flying School.

From September, 1930, to November, 1931, Major Lynch was on duty at Dodd Field, Fort Sam Houston, Texas, where he served as communications officer of that field and of the 12th Observation Squadron. For nearly four years thereafter he was on duty at Brooks Field, Texas, where his duties were mostly concerned with communications work. He was then transferred to his present station, Fort Sill.

STAFF SERGEANT JOSEPH L. MURRAY

Staff Sergeant Joseph L. Murray, who is now stationed with the First Balloon Company at Post Field, Fort Sill, Okla., and who holds a commission as a second lieutenant in the Air Reserve, was born at Philadelphia, Pa., February 18, 1903. He graduated from the Girard College Preparatory School at Philadelphia, and enlisted in the Regular Army on March 7, 1922. After serving at Langley Field, Va., with the Airship School Detachment, and later with the 24th Airship Service Company at Scott Field, Ill., he qualified in July, 1923, for appointment as a flying cadet and commenced training at the Balloon and Airship School at Scott Field, September 10, 1923. He completed the course of instruction at this school August 15, 1924, whereupon he was commissioned a 2nd Lieutenant in the Air Reserve. He was rated "Balloon Observer and Airship Pilot," effective August 29, 1924.

Sergeant Murray was promoted to the grade of Corporal in April, 1925; to Sergeant in September, 1925; and to Staff Sergeant in February, 1930.

Upon reenlistment in 1925, he was assigned to the 12th Airship Company at Scott Field and served in the capacity of pilot, rigger and crew chief on the various types of non-rigid airships assigned to that organization.

When the First Balloon Company was organized in May, 1929, and assigned to station at Fort Sill, Okla., Sergeant Murray was transferred to this organization.

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The Headquarters and Headquarters Squadron, 8th Pursuit Group, Langley Field, Va., now has a B-10B Bombardment type airplane which is being used to tow machine gun targets for the use of the entire Group. Heretofore the problem of firing at towed targets at altitudes higher than 10,000 feet was difficult to solve. By using this large ship designed for higher altitudes, and with a large amount of power, any size target can be easily towed at a speed which gives the attacking airplanes a fairer approximation of the speeds now encountered in attacking modern aircraft.

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SOLDIER'S MEDAL TO PRIVATE WELSH

For a deed of heroism performed while in the service of the United States Army when stationed at the Presidio of Monterey, Calif., Stanley R. Welsh, of Vallejo, Calif., received the Soldier's Medal at a review held on January 9th at Hamilton Field. Lieut. Colonel Russell presented the medal after reading of the citation by Major John M. Davies, Adjutant of the Air Base. The citation reads as follows: "Stanley R. Welsh, (Army Serial No. 6549561), Private, Headquarters Troop, 11th Cavalry, United States Army. For heroism displayed in saving a man from drowning in the Merced River, Yosemite National Park, Calif., on June 20, 1936. While sitting on the bank, Private Welsh noticed that a man was in distress out in the river about 75 yards distant. With utter disregard for his own safety he plunged into the swift current, succeeded in bringing the man to the surface and towing him to the beach where he immediately administered artificial respiration until the man was revived."

After the presentation, Mr. Welsh stood with Colonel Russell and received the review of troops - members of both the Base force and the Seventh Bombardment Group.

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UNWELCOME GRASS

A patch of green grass is restful to the eyes and generally a welcome sight. But there are exceptions. The News Letter Correspondent from Luke Field, T.H., states that war has been declared and is now being bitterly fought for the possession of Luke Field's new and widely advertised landing mat. Sinister and mysterious forces are at work beneath the mat, possibly the Menehunes (Hawaiian brownies to you), causing glorious lush green grass to grow on the flying field where it would never grow before and burst through the surface of the mat in engaging green patches.

Second Lieut. William I. Fernald, Air Reserve, Airdrome Officer, marshalling the forces at his command, recently opened a vigorous offensive with liquid chemicals, and just plain hoes and shovels, to destroy the importunate enemy. At this writing the latter is at least temporarily overcome, though the situation is fraught with uncertainty.

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The News Letter will welcome the receipt of items relating to the activities at Randolph Field, Texas.

NEW TYPE OF LANDING GEAR

Pilots from the Office of the Chief of the Air Corps and Bolling Field recently spent several days testing and making reports on a new type of landing gear for cargo airplanes. It was installed on a Douglas OA4-B Amphibian at Wright Field and the plane was brought to Bolling Field by Lieut. Pearl H. Robey, Air Corps, for further tests. The regular retractable landing gear was moved back about two feet on the hull of the plane and fixed in the down position.

This change in the location of the landing gear placed the center of gravity well forward of the wheels, so a third wheel was fixed to the front of the fuselage. This wheel aligns itself to the direction in which the plane is traveling and keeps it in a level position instead of the usual "tail down" position. Such an arrangement precludes any possibility of the plane nosing over from the sudden application of brakes and considerably lessens the possibility of ground loops. The pilots who tested the equipment were well pleased with its performance.

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OLD WRIGHT TRICYCLE LANDING GEAR BOBS UP

"Just sixty-five miles south of Langley Field and a little over 33 years ago," says the scribe of the 33rd Pursuit Squadron, Langley Field, Va., "the Wright Brothers flew their first aeroplane, a contraption man said would not fly. It had a tricycle landing gear, and today, after all these years of aeronautical engineering, it seems as if the boys at Wright Field think that the tricycle landing gear was not so bad after all.

And now at Langley Field we watch an OA4-A equipped with about the same type of tricycle landing gear. The two main wheels have been moved back and a third wheel placed on the nose. It takes off, flys, lands and taxies all in flying position, lands down wind, cross wind or just any way the pilot cares to, and it has no tendency to ground loop at all. To see it land you would think it might nose over, but instead she rolls along, 'hands off'."

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RAIN PREVENTS INAUGURAL DAY FLIGHTS

Inauguration Day in Washington means much to thousands of people who travel long distances to witness not only the inauguration ceremonies but also the great parade that follows. Since most of the parade consists of details from all arms of the service, it would not be complete without a representation from the Air Corps droning overhead in perfect formation. Although the Air Corps was included in the parade plans, inclement weather in the form of steady rain and a ceiling below 500 feet prevented any flying. The day before the Inaugural, Major Harlan T. McCormick, leading a flight of twelve P-26's, and Major Warren A. Maxwell, leading a flight of twelve PB-2's, arrived at Bolling Field from Selfridge Field, Mich., in anticipation of joining another flight from Langley Field and supplementing similar flights from the Marine Corps at Quantico, Va., and from the Navy.

But Inauguration Day started out with a steady rain that lasted nearly all day and, though it did not prevent the ground parade, it did prevent flying.

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COMMAND AND GENERAL STAFF SCHOOL DETAILS

A total of 37 Air Corps officers were, under Special Orders of the War Department recently issued, designated as students at the Command and General Staff School for the 1937-1938 course. These officers are relieved from further assignment and duty at their present stations, effective at such time as will enable them to comply with their orders, are then assigned to station at Fort Leavenworth, Kansas, will proceed at the proper time to that station and report between August 19 and 21, 1937, to the Commandant of the Command and General Staff School for duty. These officers are --

Lieut. Colonel Floyd E. Galloway (Major) Fort Lewis, Wash.

Lieut. Colonel Leo A. Walton, March Field, Calif.

Majors George H. Beverley and Milo McCune (Captains) Barksdale Field, La.

Majors Eugene L. Eubank, Barney M. Giles, Clements McMullen and Ennis C. Whitehead (Captains), Langley Field, Va.

Major Frederick W. Evans (Captain), Captains Ray L. Owens and Robert M. Webster, Maxwell Field, Ala.

Major George C. McDonald, (Captain), Mitchel Field, N.Y.

Major Younger A. Pitts (Captain), Hqrs. 7th Corps Area, Omaha, Nebraska.

and the following-named officers now attending the Air Corps Tactical School:

Major Harold H. George

Majors (Captains) James D. Givens, Frederick M. Hopkins, Jr., John W. Monahan and Bob E. Nowland.

Captains Orvil A. Anderson, Earl W. Barnes, James M. Bevans, Lawrence J. Carr, Clinton W. Davies, Uzal G. Ent, Donald F. Fritch, Robert W. Harper, John R. Hawkins, Joe L. Loutzenheiser, Edmund C. Lynch, John F. McBlain, Earl E. Partridge, James S. Stowell, Yantis H. Taylor and Wallace E. Whitson.

1st Lieuts. Joseph G. Hopkins, William A.R. Robertson and Willard R. Wolfinbarger.

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NEW MINIATURE RANGE AT KELLY FIELD

By the News Letter Correspondent

Kelly Field has a new building! As if wonders will never cease, be it hereby told in secret conclave that the Advanced Flying School now boasts the cornerstone of permanent construction is nearing completion as the new Miniature Range takes on its finishing touches. Visiting civilians, itinerant aviators, and even permanent post personnel have wondered and questioned just what that constantly growing octagonal cement structure at the extreme eastern end of the hangar line might be. It has been called everything from a grain elevator to a lethal gas chamber.

As a receptacle of incarceration it could not be improved. Towering 84 feet high, with walls of reinforced concrete two feet thick, and having an inside diameter of 60 feet, 4 inches, it is a veritable fortress. There are two balconies for student observers, at 46 feet, 10½ in. elevation, and 56 feet, 10½ in. elevation, respectively. The instructor's platform extends out from the south wall 20 feet, and is several feet above the top balcony. It is felt that all instructors will desire a safety belt firmly wired to the platform. The height is not only enough to make an aviator dizzy, but any slip of one's foot would mean a 60-foot drop.

Parachutes have been suggested as required equipment. Located around the two balconies are stations for students, each to be equipped with signal communications so they may send and receive messages. A motion picture booth is located in the top center of the building.

Similar to the method now used, a terrain board is to be installed on the ground floor on which will be represented appropriate terrain in relief and to scale, with highways and railways, and two opposing ground forces. The terrain board will have numerous perforations beneath which will be lights which may be flashed on or off from the instructor's control board to give the effect of shell and shrapnel bursts. The terrain board proper, on the floor level, is four feet above the circular pit, which allows access to the wiring and light system.

There will also be installed on the ground floor an Infantry and Artillery panel system to demonstrate one-way procedure. These panels will be illuminated and controlled by switches from the control room switchboard. The proposed arrangement is to give the effect of ground forces displaying the different panels to the airplane flying overhead.

A new plan of instruction is under consideration, and with its adoption and perfection it is believed that the Infantry and Artillery courses will be more easily and accurately presented to the student. The sensing problem will be more realistic and as close to observing real fire as possible.

First, moving pictures are to be taken from the air of Artillery and Infantry in action, with the camera actually recording all types of adjustments and the sound apparatus reproducing the communication of the adjustment. These pictures will be projected on a horizontal screen installed on the ground floor. This motion picture screen is to be constructed on rollers so it could be superimposed on the terrain board without difficulty.

The motion picture booth is to be built into the top center of the building and will provide ample room for two projectors to be installed vertically.

With the actual movies as one method of illustration, still another idea is being developed to give the student practice in sensing shots and procedure. The second plan is to have the Signal Corps make animated moving picture diagrams of problems involving all types of adjustments. The student views the shots as from the airplane and proceeds with his sensings and actual ground communication. This plan has the advantage over the terrain board with lighted holes, in that the bursts appear in their normal shape as picked up by the camera or eye; they drift and disappear as they normally would, while the lights are necessarily fixed in position and size and merely represent the position of a shot.

It is felt that this new Miniature Range will be a vast improvement over the old one. And the permanency of this structure leads to the hope that in the not too distant future Kelly Field may join the other air fields and boast of all new buildings too.

---oOo---

THE GEM OF THE YEAR

The Douglas was flying blind. A woman passenger looked out to the right side through the window, called the stewardess, and asked, "What's that light out there?"

"That's a navigation light."

Later she moved to the other side of the ship in order to get the reading light over her left shoulder. She called the stewardess again, "What's that other light out there?"

"That's a navigation light, too."

"Now, isn't that simple? All the pilot has to do is to keep the airplane between those two lights."

Well, it isn't simple if you don't.

---oOo---

There are 270 young women employed as hostesses and 42 men employed as stewards on American-operated air lines.

HIGH SPEED IN NEW BOMBER

"Comparing favorably with the speed of Howard Hughes, holder of the transcontinental speed record of nine hours, twenty-six minutes from Los Angeles to New York, was the non-stop flight of Colonel Follett Bradley, Chief of Staff of the GHQ Air Force, from San Antonio to Langley Field," says the Langley Field News Letter Correspondent, who goes on to say that Colonel Bradley in a standard B-18 Bomber took off from Randolph Field at 9:50 a.m. and, favored by strong winds at 9,000 feet, passed over Langley Field just five hours and forty minutes later, thereby establishing a record for flights between these points. Colonel Bradley's average speed was 244 miles per hour, and he reports that at times a ground speed of 275 miles per hour was maintained. Accompanying Colonel Bradley on the trip was Major James P. Hodges, co-pilot; Sergeant Moran, crew chief, and Private Gmitter, radio operator.

Curiously enough, the Langley Field Correspondent wrote the above news item on January 18th, just the day before Howard Hughes eclipsed his own transcontinental speed record by flying the 2490 miles from Burbank, Calif., to Newark, N.J., in 7 hours, 28 minutes and 25 seconds, or at an average speed of 332 miles an hour.

According to newspaper reports, Hughes during the early part of his hasty trip across the United States flew at an altitude of 20,000 feet, and while over Winslow, Arizona, the cold and lack of oxygen had him on the edge of unconsciousness. Barely able to make his hands respond, he shoved the control stick slowly forward until the richer, warmer air of 15,000 feet brought him back to normal.

Congratulated on all sides for his remarkable performance, Hughes stated that the credit should go to George Palmer, his designer, who had taken the Northrop Gamma low wing monoplane in which the previous transcontinental speed record was made, lengthened the wings to 32 feet, widened them, substituted a new retractable landing gear, and made some refinements in the fuselage. Palmer also took a Pratt & Whitney "Wasp,Jr." 14-cylinder engine and stepped it up to 1,000 horsepower. So powerful is this motor, according to Palmer's statement, that Hughes on his record-breaking trip used but 60% of its potential power, because the airplane could not carry enough fuel for a 2500-mile trip at top speed. He further stated that, in view of the fact that 200 gallons of gas were consumed out of the 284 gallons the plane carried at the start of the flight, the plane would have a cruising radius of 3,500 miles at that rate of fuel consumption.

At the rate of speed Colonel Bradley made the trip from San Antonio to Langley Field, his time for the entire trip of 2500 miles across the continent - assuming that he flew non-stop and that the same conditions prevailed all the way - would have been approximately 10¼ hours.

Delving into the past just a little: The first non-stop flight across the American continent - an achievement which startled the country - was accomplished on May 2, 1923, by the Army pilots, Lts. John A. Macready and Oakley G. Kelly, who negotiated the distance of 3520 miles from New York to San Diego in the Transport T-2 in 26 hours, 50 minutes and 38 seconds.

The next year, on June 23rd, Lieut. Russell L. Maughan, on his celebrated "Dawn to Dusk Flight," clipped some five hours off this record, although his accomplishment was not a non-stop flight. Flying from New York to San Francisco, and making stops at Dayton, Ohio; St. Joseph, Mo.; North Platte, Neb.; Cheyenne, Wyo., and Salduro, Utah, he accomplished the entire transcontinental journey in his little Curtiss Pursuit plane in an elapsed time of 21 hours and 48½ minutes.

Thus aviation marches on.

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TWO LANGLEY FIELD NONCOMS. REWARDED

Before a review of all the Langley Field Air Base troops, Staff Sergeant Willie D. Norris and Sergeant Wayne D. Musser were presented the Soldier's Medal by Brigadier General Henry C. Pratt, Commanding General of the Second Wing, GHQ Air Force, for heroism in saving valuable government property and possible loss of life, when an experimental flare started to ignite while being installed in an airplane. With complete disregard for their own personal safety, these two men removed the flare and attempted to carry it to a safe distance from the airplane. The flare, however, exploded while near the plane, injuring Sergeant Musser and igniting the wing of the airplane.

Says the Langley Field Correspondent: "We all congratulate these two men on receiving this honor, which they so richly deserve, also the 20th Bombardment Squadron."

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Second Lieuts. (Air Reserve) Graeme Stewart Bond, of Chicago, Ill., and Gilmore Vincent Minnis, of Hadley, Pa., now on duty in the Hawaiian Department, are continued on active duty to June 15, 1939. Second Lt. Harold L. Jones, Air Res., of Bath, Pa., was assigned to active duty at Mitchel Field to Jan. 14, '40.

LANDING AT AN AIRPORT DURING "SOUPY" WEATHER

In a recent issue of THE AIR LINE PILOT, a monthly aeronautical publication, a chief pilot of one of the commercial airlines lets fly several sharply pointed darts at the ground men of airline organizations, particularly the traffic control tower men. First off, he advances what appear to be plausible reasons as to why airplanes are spoken of in the feminine gender, to wit:

"She made two hundred miles an hour; then she let me down."

"You push 'em left and they go right; you push 'em right and they go left; you don't push 'em and they go mad."

In view of the above mentioned lack of consideration and agreeableness, the chief pilot proposes that the Sperry Gyro Pilot be so designed that the ailerons and rudder could be turned over to the Sperry, while the pilot maintains his influence with the flippers. The advantage of this expedient is manifest. The way it is now, when making a blind approach on a beam, the pilot listens with his left ear to the radio beam, with his right ear to the traffic control tower man in order to keep him calm when he asks -

"So you're blind, eh? Well, where are you now?"

The T.C.T. man can't use this information for any purpose of aiding the plane to a landing, because the answer always is -

"All right, I'll bite. Where am I?" Or, more poetically, "Shut up."

The purpose of this inquiry is to keep the pilot from getting bored. The pilot doesn't want to know where he is. He knows that, all right. He is in a mess. What he wants to know is, where the ---- the field is.

The chief pilot urges that all pilots, faced with such cheering prattle, reply:

"We're up here. Where are you?" Now that information could be used, if he could get it. It's just as bright one way as the other.

Then the T.C.T. man says -

"Are you underneath yet?"

This is important. Depending upon this information the mighty Tower Man knows whether to scratch his left side or his right side.

With the other ear the pilot listens to his company, represented by the radio operator who hopes the crack-up will be where he can see it, for it's a dull night; the flight superintendent, who wishes he had taken a look at the weather the last hour or two instead of clearing the ship in; and the weather expert, who does look at the weather, though, of course, not the actual weather - that's against the rules - but at a sheet of yellow paper which looks professional as all get out.

The operator says -

"What's your altitude? Two hundred? Ceiling is one thousand feet and visibility two miles."

Then the pilot should enter into the spirit of the joke and chortle, "Ha, ha!"

The flight superintendent says -

"If you can't land, don't do it. Go to Albany. You say that's closed in! I guess I'll have to look at the teletype."

The pilot then says - "Attaboy!"

The weather expert says -

"What's the weather?" He's simply got to get that dope so that he can tell the pilot, because that's his job - and its cold and wet outside.

The pilot, with his other ear - how are we running on ears now? Oh!

With his left hand the pilot takes a putty knife and chips a peep hole in his windshield for his left eye. In practice he won't be able to see anything with that eye - except his finish. With this same hand he controls the ailerons and flippers. With the other hand he works the throttle and pitch controls. With the other hand he holds the microphone, and with the other he handles the beam volume control and the radio switches and the tuning dials.

Now, while keeping his left eye glued on the peep hole, he corkscrews his right eye over the blind flying and motor instruments, and the altimeter and the clock and the airspeed. All of this is mighty important - at least to his creditors.

The ship acts like a broken field runner, but the pilot throws her for a loss at the end of the runway, brings her to the ramp, brushes the ice off his lap and the sweat off his face and goes into the operations office, where he is told how to fly a beam. Those boys can bring in a swivel chair every time, drift and all.

Now, if the pilot could turn over the rudder and ailerons to Mr. Sperry, he would have two hands and three eyes left for contingencies. The idea seems at least worth a good trial.

But in essence the idea is not so very new after all. Pilots since the old Wright pusher days have been turning over all controls. Where stands the aviator who can claim that he has never said,- "Here, God, you take her!"

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Second Lieut. Ralph Wm. Rodieck, of Palestine, Texas, transferred from Panama to Barksdale Field, was given extension of active duty to June 15, 1939. Second Lieut. George Kenneth Crain, Air Reserve, of Birmingham, Ala., was also assigned to active duty at Barksdale Field, his tour to terminate January 14, 1940. This date also terminates the active duty tour of 2nd Lieut. Alfred George Witter, Air Reserve, of Bennefonte, Pa., assigned to station at Mitchel Field.

NONCOMMISSIONED OFFICERS QUALIFIED FOR MASTER SERGEANT, AIR CORPS
Effective January 1, 1937

1 Trager, William*
2 O'Sullivan, Mortimer*
3 Binder, Michael*
4 Sanders, Aaron J.
5 Mathews, Wardell L.*
6 O'Donnell, James D.
7 Francisco, Ray
8 Bohrat, Joseph
9 Bernier, Alfred
10 Grisham, James S.*
11 Napier, Wythe J.
12 Tingle, Dan W.
13 Johnson, LeRoy L.*
14 Booth, Brainard D.
15 Bray, Neal
16 Adams, Arthur H.
17 Riley, William J.
18 Duke, Robert*
19 Arnold, George
20 Mooney, Harry
21 Small, Ballard B.
22 Glendy, Elga M.
23 St. John, Ruben
24 White, Benjamin*
25 Laver, Joe G.*
26 Maxwell, Edcil C.
27 Bollenbach, John
28 Miller, Edward
29 Wetteran, Edward W.
30 Moody, William T.*
31 Goff, Ira A.
32 Duprey, Joseph A.
33 Grimme, John P.*
34 McKnight, Charles H.
35 Klinger, Benjamin H.*
36 Carr, Lynn B.*
37 Kretz, William
38 Rohlik, Waldoe*
39 McAndrews, John
40 Bentley, Leonard L.
41 Malloy, Stephen A.
42 Hobson, Earl
43 Pearson, James
44 Ceccato, Peter
45 Walters, Clyde L.
46 Stoser, Walter
47 McNeely, Ralph
48 Suggs, John M.
49 Leffler, Charles E.
50 Kendrick, Bryan J.
51 Carpenter, Ross
52 Hohensee, Emmett F.
53 Harrison, George E.*
54 Kohn, Louis
55 Harris, Arthur H.
56 Ashby, Walter G.
57 Justice, Nye P.
58 Draper, Charles W.
59 Witsch, Henry A.
60 Winans, Edward L.*
61 Ward, Leamon V.
62 Lorimer, Robert R.*
63 Johnson, Lonnie M.
64 Davids, Ewald*
65 Gordon, Frederick
66 Moslander, Charles E.
67 Innes, Victor A.
68 Cobb, Horace W.
69 Swanson, Nels E.
70 Wing, Richard E.
71 Doyell, Clyde W.
72 Hans, Karl L.M.
73 McGhee, Lloyd H.
74 Darby, Harry
75 Shepard, Delana A.
76 Wentzell, James H.*
77 Lantz, Carl G.
78 Wheeler, Adam L.
79 Ritenour, Ervin W.
80 Herb, Donald P.
81 Schmidt, George E.
82 LeRoy, Harold D.
83 Stein, Joseph J.
84 Brown, Lee E.
85 McCartney, George D.
86 Blais, James G.
87 Haffner, Hans G.C.
88 Von Euw, John B.
89 Wiedekamp, Karl T.
90 Blackden, William H.
91 Hluchan, Charles
92 DesMarais, William
93 Auer, Adam M.
94 Jensen, Peter
95 Hill, James W.*
96 Albin, Louis B.
97 Alexander, Harry W.*
98 Cheska, Benjamin A.
99 Graham, John
100 Crone, Carmon
101 Gargus, Alvin W.*
102 Downing, Harvey J.
103 Miller, Fred P.
104 Turner, William H.
105 Hopper, Walter S.
106 Goad, Robert L.
107 Apple, William V.
108 Raymond, Edgar J.
109 Jones, Hurley D.
110 Van Matre, William H.
111 Jackson, Paul B.
112 Roberts, Carl C.
113 Hoijer, Richard E.
114 Filkins, Joseph A.
115 Grabsky, Walter*
116 Williams, Wallace
117 Schaefer, Chris J.H.
118 Willison, Thomas L.
119 Lofley, William J.
120 Peckham, Russell C.
121 Valtierra, Leobardo
122 Gibbins, Stanley K.
123 Simons, Wilbur J.
124 Baros, Rudy J.
125 Fisher, George H.
126 Thermenos, Nicholas*
127 Glasscock, Harry
128 Jewell, Arvin B.
129 Boward, Richard C.
130 Koziboski, Edward A.
131 Chambliss, John R.
132 Adams, Firman S.
133 Stanowich, Steve*
134 Warren, Luther*
135 Christian, Walter
136 Mueller, Charles
137 Merian, August
138 Fusz, Charles F.
139 Hobart, Clyde J.
140 Loomis, Sidney E.
141 Himes, Olin C.
142 Mathews, Daniel A.
143 Dreier, Elmer L.
144 Maroul, John J.
145 Glasscock, Benton D.
146 Myers, Allen G.
147 Fitzgerald, John E.
148 Palmer, Clarence A.
149 Kelly, Robert J.*
150 Smith, Alfred N.
151 Logsdon, Jewel G.
152 Casto, Clyde R.
153 Moorhead, William B.
154 Cattarius, Adolph
155 Thompson, Benton T.
156 Hoffman, Carl
157 Thomas, Robert H.
158 Tupper, Hobson
159 Thomas, Edwin D.
160 Sampson, Harold F.
161 Baldwin, Thomas J.
162 Ferrell, Bruce R.
163 Clark, Irvin L.
164 Craig, Don J.
165 Bell, Charles C.
166 Jones, William L.*
167 Dombeck, Jacob S.
168 Mick, Vernon
169 Stolte, Arthur
170 Lawrence, Harry E.*
171 Johnson, Harold V.
172 Waters, Claude G.
173 Rosser, John C.
174 Swisher, Douglas M.
175 Moore, Virgil
176 Casey, Patrick T.*
177 Freshwater, Glenn E.
178 Parrett, Raymond C.
179 Burroughs, John J.
180 Wright, Lee R.*
181 Wallace, John R.D.
182 Revert, Artie L.
183 Waddell, Walter A.
184 Forrest, James A.
185 Freathy, Albert E.
186 Hartley, Ernest N.
187 Henneck, Michael P.
188 Townsend, William B.
189 Fox, William B.
190 Olson, Gilbert
191 Scott, Elliott
192 Redifer, Karl B.
193 Randles, Arthur E.
194 Hughes, Raymond J.
195 Pope, William E.
196 Faust, Carl M.
197 Miller, Joseph J.*
198 Silvers, Lee
199 Gossett, Henry
200 Marth, Hugh J.
201 Reist, Emil
202 Akers, Thornton
203 Tomberlin, George D.
204 Waytulonis, Victor M.

205 Foster, Edwin C.
206 Hamilton, Robert E.
207 Grossman, Paul
208 Callaghan, George
209 Croy, William D.
210 Junkert, Albert G.
211 Walsh, Lambert C.
212 Gray, Henry H.
213 Herman, Leo I.
214 Mitchell, Gregory A.
215 Ferguson, Archie L.
216 Brown, George D.
217 Scott, Grover B.
218 Axford, Leo W.*
219 Harmon, William T.*
220 Brees, William M.
221 Crawford, Wallace W.
222 Field, Charles B.
223 Dozier, John
224 Schooler, Oscar H.
225 Holt, Jewel A.*
226 Philapy, Russell L.
227 Siebenaler, Frank J.
228 Hahn, Richard*
229 Cayhue, Arthur H.
230 Hewitt, Albert G.
231 Dryer, Howard H.
232 Grey, Joseph R.
233 Fulkrod, Benjamin F.
234 Totman, Theodore C.
235 Johnson, Lloyd N.*
236 Mannion, Martin D.
237 Hudson, Littleton

NOTE: Names marked with an asterisk denote the grade of First Sergeant. All others carry the grade of Technical Sergeant.

It is hoped to publish the list of Staff Sergeants eligible for promotion to the grade of Technical Sergeant in the February 15th or, at the latest, March 1st, issue of the News Letter.

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7TH BOMB. GROUP CONDUCTS CHEMICAL WARFARE SCHOOL

The 7th Bombardment Group, Hamilton Field, Calif., conducted its first Group Chemical Warfare School just before the 1936 Christmas holidays. One officer and two enlisted men were selected as students from each of the 9th, 11th, and 31st Bombardment Squadrons, the 88th Reconnaissance Squadron, and the 7th Bombardment Group Headquarters Squadron. The 5th Air Base was also represented by three students, making a class of eighteen.

Classes were held daily, from 11:00 to 12:00, over a period of ten days. A variety of subjects were covered as thoroughly as possible in what turned out to be a surprisingly limited amount of time. Chemical agents, gas mask drill, individual and collective protection, chemical weapons and munitions, training methods, care of equipment, and probable Air Corps use of chemical agents were some of the subjects taken up. The course wound up with a demonstration of the new "tomato can" method of laying down heavy concentrations of mustard gas from low flying attack planes.

The officers and soldiers who attended the school will act as instructors in their squadrons during the months of January, February and March, in preparation for the Wing Maneuvers in April, when it is expected that each squadron must defend its airdrome, its personnel and its equipment against chemical attacks to be launched by squadrons of the 17th Attack Group.

Instructors detailed for the school were 1st Lieut. L.O. Peterson and 2nd Lieut. R.E. Jarmon. Both officers had graduated from the First Special GHQ Air Force Officers' Course held at the Chemical Warfare School, Edgewood Arsenal, Md., during the month of May, 1936.

Students attending the school were: Major R.E. Morrison, 2nd Lieuts. J.E. Shuck, E.W. Virgin, R.C. Kugel, H.R. Volin, L.A. Walker,Jr., Technical Sergeant H.B.R. Adams Staff Sergeants A.R. Levesque, F.E. Deyo, Sergeants B.I.Doughty, O.C. Yeager, Corporals C. Dixon, L.E. Capps, Privates, 1st Class, J. Gardner, V.L. Richardson, Privates O.R. Kamstra, R.W. Echkardt and J. Mathison.

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The News Letter Editor would welcome the contribution of items covering activities at March Field, Calif., and Wheeler Field, T.H.

LT. KNIERIEM AND PVT. ROBERTS DIE IN CRASH

Second Lieut. Herbert E. Knieriem, Air Reserve, pilot, and Private, 1st Class, Hartley E. Roberts, radio operator, of Hamilton Field, Calif., crashed to their deaths on the night of January 4th. Their plane, a B-10B Bomber, was one of two sent out by the 11th Bombardment Squadron for a training flight over the San Joaquin Valley. They left the field at 7:00 p.m., and were due to return at 10:00 p.m. Having completed their mission, they were returning to the base when heavy winds and blinding rain squalls were encountered in the vicinity of the Bay Area, and especially around Hamilton Field. The radio station at Hamilton Field was in communication with Private Roberts up until 9:50 p.m., and had sent out the warning to land as soon as possible, as there was imminent danger of the blinding curtain of rain closing in on the field. Private Roberts answered with an affirmative "OK."

What happened after that is a matter of conjecture. His flight leader, Lieut. A.K. Dodson, landed at 10:55 p.m., but, due to the heavy winds, was forced off the paved runway and escaped by a narrow margin from being blown over. Lieut. Knieriem was coming in for the landing when the squall closed in, shutting off the view and necessitating the need of altitude.

After a search of twenty hours, the wreckage was found scattered over an area of 300 yards radius in the northern part of San Pablo Bay, some seven miles from the air base. Part of the fuselage was found in one spot, while almost 200 feet away were found the engines, giving mute evidence of the terrific impact. All signs indicated that the plane was flying at a speed of 200 miles per hour or better.

Up until the time of this writing, no trace of the bodies of the two men has been found. Divers from the Navy and the Army blimp from Moffett Field assisted searching parties, but all to no avail, necessitating the notation "Missing in line of duty" being placed after the names of both men.

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Lieut. Knieriem was born February 7, 1906, at Corbett, Idaho. After graduating from grammar schools and high school he attended the Modesto, Calif., Junior College for two years, and for 2½ years thereafter he attended the San Jose State Teachers College, Calif., from which he graduated in June, 1929. For 4 years he was affiliated with the 184th Infantry, California National Guard, and his vocation in civil life was that of an instructor in manual training at the city schools of Visalia, Calif.

Enlisting in the Air Corps, he served with the 75th Service Squadron, Wheeler Field, T.H., from August 26, 1931, to September 20, 1932, and with the 6th Pursuit Squadron, Wheeler Field, to October 2, 1933, when, passing the examination for appointment as a Flying Cadet, he was sent to the Air Corps Training Center for primary flying training at Randolph Field, Texas. He completed the course of instruction in June, 1934; was transferred to the Advanced Flying School, Kelly Field, Texas; specialized in Bombardment Aviation; graduated October 13, 1934; was rated an "Airplane Pilot," effective that date, and assigned to duty under his Cadet status for the period of one year with the 11th Bombardment Squadron at Hamilton Field, Calif. He was then commissioned a second lieutenant in the Air Reserve and remained a member of the 11th Bombardment Squadron until his untimely death.

Private Roberts was born on October 16, 1906, at Hagerman, Idaho. He enlisted in the Coast Artillery on June 1, 1928, and transferred to the Air Corps on November 7th, of that year, serving with the 23rd Bombardment Squadron at Luke Field, T.H., until August, 1931, when he was transferred to Chanute Field, Rantoul, Ill., where he pursued the course of instruction in parachute rigging at the Air Corps Technical School.

Following his graduation as a Parachute Rigger, November 13, 1931, Private Roberts was assigned to the 11th Bombardment Squadron, then stationed at March Field, Calif., and his service with this organization was continuous from that time.

The sincere sympathy of the Air Corps is extended to the bereaved families of these men who died in the service of their country.

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TRAINING IN THE 9TH BOMBARDMENT SQUADRON

Normally, one month of good weather is required to complete bombing for approximately 20 officers. However, the 9th Bombardment Squadron, Hamilton Field, Calif., has found it difficult to train its officers within the past three months, due to extremely poor weather conditions.

Heavy forest fires in the northwest and 100 miles to the south of Hamilton Field cast a blanket over the West Coast for almost two full months. These fires started in October and lasted throughout November. At times this blanket of smoke covered altitudes from zero to seven thousand feet. Only at altitudes greater than 7,000 feet could a pilot have good visibility. This smoke haze presented almost as great a problem as fog. On the few missions which were flown during these two months, it was necessary for the pilots to fly by instruments with no aid from the horizon.

An approximate compass course was flown toward the target. When the target became visible to the bombardier, he made last minute corrections and aided the pilot to get accurately on course. Usually the bombardier did not pick up the target until within two or three miles of it. Since most of this bombing was performed at airspeed in excess of 160 miles per hour, the short time which the two to three miles left for the pilot to get accurately on course, the bombardier to set up his drift and rate of travel can be appreciated. "It is hoped that the weather conditions improve enough to complete the bombing satisfactorily during the balance of the fiscal year," says the Hamilton Field Correspondent.

The 9th Bombardment Squadron is developing its technique in bringing a formation through a fog area where favorable weather conditions exist at either end of the area.

The Squadron leader, upon approach to the area, announces over his radio the altitudes for each flight, the calibrated airspeed and the magnetic heading to be flown. The first flight flies the exact thousands of feet altitude and the second the five hundred and, where there is a third flight, it flies the exact thousands as assigned to the first flight. Thus, with three flights, "A," "B" and "C," and with 7,000 feet sufficient altitude to clear all obstacles, "A" Flight would be assigned the altitudes 7,000', 8,000', 9,000'; "B" Flight, 7,500', 8,500', 9,500'; "C" Flight, 7,000', 8,000' and 9,000'.

The squadron is then put in right echelon, and circling to the left the airplanes leave in their respective order at one minute intervals, flying the heading, altitude and airspeed assigned.

As soon as the formation has cleared the fog area, the squadron commander announces over his radio, "Fog area cleared, assemble at _____ feet," - an altitude above those assigned the airplanes. He then ascends to the announced altitude and begins circling to pick up the squadron. As each airplane clears the fog area and spots the squadron commander, he joins in formation with him. As soon as the entire squadron has joined the squadron commander, the flight leaders leave the formation to be joined by their wing men and then return to normal javelin formation. With the perfection of technique, the altitudes between airplanes may be decreased.

This technique has not yet been used in actual fog condition. During the recent field exercises at Stockton, Calif., the squadron used it, assuming that the fog covered a definite area, and the pilots going under the hood during the time necessary to cover that area.

This Squadron has had success in problems of this kind, and believes this technique to be the answer to the problem of moving formations of Bombardment through fog areas. Such technique is necessary in areas such as the Pacific coast where localized fog may occur.

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Major Walter L. Miller (Captain), Air Corps, stationed at Randolph Field, Texas, is under orders to proceed to his home and await retirement.

RESERVE COMMISSIONS FOR FLYING CADETS

The following-named Flying Cadets of the Air Corps, members of Class No. 24-B which graduated from the Advanced Flying School, Kelly Field, Texas, February 15, 1936, and who will shortly complete their year of active duty with Air Corps tactical units, under their Cadet status, have been recommended for commission as Second Lieutenants in the Air Reserve on March 1, 1937, and to be placed on extended active duty on the day following.

The names of these Flying Cadets and the stations at which they are now serving follow:

Barksdale Field, Shreveport, La.:

Bruce, Bertrand B.	Los Angeles, Calif.
Camp, Wilbur D.	Arlington, Texas
Campbell, Arch Graham	Fort Worth, Texas
Fariss, Wolcott Austin	Sacramento, Calif.
Hawes, E. Hugh	Seedrift, Texas
Lessig, Cecil Parker	Salina, Kans.
Stevens, Kermit D.	Portland, Ore.
Wade, David	Minden, La.
Whitt, John Doyle	Austin, Texas
Wood, Robert Carroll	Haynesville, La.
Young, Harry Blake	Birmingham, Ala.

Brooks Field, San Antonio, Texas:

Marcos, Bela A.	Los Angeles, Calif.
Ryder, Robert W.	Minneapolis, Minn.

Hamilton Field, Calif.:

Finn, Ryder Waldo	McCoy, Ore.
Hayes, William L., Jr.	Sacramento, Calif.
Walker, David Henry	Sacramento, Calif.

Selfridge Field, Mt. Clemens, Mich.:

Johnston, Robert Loughery	Bellevue, Pa.
Marion, Charles Emlen	Detroit, Mich.

Langley Field, Va.:

Cavenah, Kenneth Andrew	Helper, Utah
Eakin, John Hitt	Hudson, Ohio
Gibson, Kenneth H.	Salt Lake City, Utah
Johnson, Lowell F.	Lafayette, Ind.
Longacre, Clarence Kinney	Williamsport, Pa.
Rueter, Chris H.W.	Waco, Texas
Willoughby, Earl	El Centro, Calif.

March Field, Calif.:

Brown, Nelson T.	Tulare, Calif.
Hardy, John Spencer	Logansport, La.
Reynolds, Elbert D.	Beaumont, Texas
Warren, Beverly Howard	Plainview, Texas

Mitchel Field, L.I., New York:

Burnham, Robert F.	Battle Creek, Mich.
Creer, William Edward	Spanish Forks, Utah
Donicht, Harry Louis	Glencoe, Minn.
Helfert, Howard W.	Sioux Falls, S.D.
Lancaster, Charles C., Jr.	Lexington, Ky.
Olinger, Robert L.	Angola, Ind.
Sexton, Robert Curtis	Los Cruces, N.M.
Sherman, Willard E.	Mt. Vernon, S.D.
Wackwitz, Ernest F., Jr.	Rockville Center, N.Y.
Walker, Audrin R.	University, Ala.

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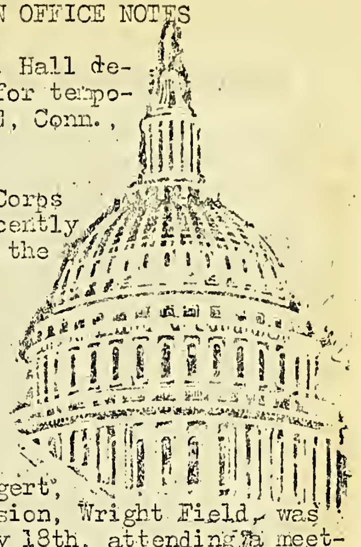
Recent operations of the 31st Bombardment Squadron, Hamilton Field, Calif., were devoted mainly to instrument flying and dead reckoning navigation. Seventy-five percent of the officers qualified in instrument flying, and the navigation training is well under way.

WASHINGTON OFFICE NOTES



Colonel Chalmers G. Hall departed January 27th for temporary duty at Hartford, Conn., and New York City.

Officers from Air Corps stations who were recently on temporary duty in the Chief's office were: Lieut. Colonel Carl Spatz, from Langley Field; Major L.P. Hickey and Captain E.R. McReynolds, Langley Field

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Major Howard Z. Bogert, of the Materiel Division, Wright Field, was in Washington January 18th, attending a meeting of the National Advisory Committee for Aeronautics.

Recent visitors to the Chief's Office were: Major W.C. Morris, Instructor, 37th Division Aviation, Ohio National Guard, Cleveland; Capt. W. H. Hardy, from Kelly Field, Texas, and Captain A.Y. Smith, of Langley Field, returning from a ferrying trip.

Captain John J. Honan, J.A.G. Dept., returned from temporary duty at Wright Field.

Major A.W. Marriner departed January 21st for temporary duty at Wright Field.

Lieut. Colonel G.E. Brower departed for New York City January 25th to attend meetings of the Institute of Aeronautical Sciences and the Aviation Show.

Lieut. Colonel H.H. Young, who had a siege of the "flu," returned to duty January 29th.

Lieut. Colonel Ross G. Hoyt, of the Information Division, returned to duty January 28th after ferrying an C-46 from the West Coast to the Boston Airport.

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ACCURACY PLUS

Near the first of the year, the Air Corps detachment at Peter Pan Airport, Pine Knot, Calif., was snow-bound for a week. A record five-foot snowfall blocked both roads into the Big Bear Valley, in which the airport is situated. Radio messages indicated an impending food shortage. The 19th Bombardment Group was then ordered to drop food and other supplies to the detachment personnel at the camp.

Flying Cadet Ketcham, 30th Bomb. Sqdn., ordered to deliver the supplies to the camp, flew a B-10B, with Flying Cadet Boyd and Corporal Wellwood as crew. Some of the supplies were attached to parachutes, while others were wrapped so that they could be dropped in the snow with no damage. After trying several approaches to determine which one was most favor-

(Continued on Page 22)

BIOGRAPHIES

LIEUT. COLONEL CLINTON W. HOWARD

Lieut. Colonel Clinton W. Howard, Air Corps, now attending the Army War College, was born at Brockton, Mass., November 27, 1890. After attending Clark University at Worcester, Mass., for two years, he received appointment as cadet at the United States Military Academy, from which he graduated June 12, 1915, when he was appointed a second lieutenant and assigned to the 3rd Field Artillery.

He served at Sparta, Wis., to September 20, 1915; at Fort Sheridan, Ill., as instructor at the First Training Camp to October 15, 1915; at Fort Sam Houston, Texas, to November 16, 1915, being assigned to the 4th Field Artillery on November 2nd. He served with this regiment at El Paso, Texas, to March 18, 1916, and then with the Punitive Expedition into Mexico. He was promoted to 1st Lieutenant, July 1, 1916.

Attached to the Aviation Section, Signal Corps, July 7, 1916, Col. Howard completed flying training and received the rating of Junior Military Aviator, April 6, 1917, which automatically promoted him to Captain. He served as Supply Officer at the Signal Corps Aviation School, San Diego, Calif., to August, 1917, and was then transferred to Post Field, Fort Sill, Okla., and assigned to duty as Officer in Charge of Flying. In March of 1918, he was transferred to Langley Field, Va., where he was commanding officer of the School for Aerial Observers until August 15, 1918. From that date until March, 1919, he was in command of Langley Field and, after several weeks' duty at Rockwell Field, Calif., as Officer in Charge of Maintenance and Supply, he was assigned to the command of the Air Service Flying School at Payne Field, West Point, Miss.

Col. Howard assumed command of Post Field, Fort Sill, Okla., on January 10, 1920. In July of that year he was placed in command of Pope Field, Fort Bragg, N.C., and remained on this duty until October 28, 1931, when he was assigned as student officer at the Air Service Engineering School, McCook Field, Dayton, Ohio. His graduation from this school in August, 1921, was followed by duty for a period of two years as a student at the Massachusetts Institute of Technology, Cambridge, Mass. He then returned to McCook Field for duty in the office of the Chief Engineer, Engineering Division. He was appointed Chief Engineer of this Division in July, 1924, and remained on this duty for a little over a year, when he was transferred to foreign service, serving in the Philippines as Commanding Officer of the 4th Composite Group and Nichols Field, to December, 1927.

Assigned to duty at the Materiel Division, Wright Field, Dayton, Ohio, Col. Howard served as Chief of the Airplane Branch until August, 1928, and as Chief of the Experimental Engineering Section (later the Engineering Section) until January, 1934, when he was assigned to the Office, Chief of the Air Corps, Washington, D.C., where he was on duty in the Training and Operations Division for a year, and thereafter, until August, 1935, he served in the capacity of Assistant Executive.

After completing the one-year course at the Army Industrial College, from which he graduated in June, 1936, Col. Howard was assigned as student at the Army War College.

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LIEUT. COLONEL BENJAMIN G. WEIR

Lieut. Colonel Benjamin G. Weir, Air Corps, now on duty in the Panama Canal Department as Commanding Officer of Albrook Field and the 16th Pursuit Group, was born at Springfield, Ohio, July 25, 1891. Upon his graduation from the U.S. Military Academy, June 12, 1914, he was commissioned a second lieutenant and assigned to the 4th Infantry. He served with his regiment at Vera Cruz, Mexico, September 16 to November 19, 1914; at Galveston, Texas, to September 4, 1915; in the Brownsville, Texas, District, to June 11, 1916. Attached to the Aviation Section, Signal Corps, he was assigned as student at the Aviation School at San Diego, Calif., and, upon the completion of his flying training, his next tour of duty was at Kelly Field, Texas, where from July 12, 1917, to August 31, 1917, he commanded the 3rd Aero Squadron. He was transferred with this organization to Post Field, Fort Sill, Okla., and was stationed there until March 19, 1918. Following duty at Langley Field, Va., as director of the School for Aerial Observers, and for a short period as Engineer Officer, to February 5, 1919, Col. Weir was transferred to Washington, D.C., for duty in the Office of the Chief of Air Service as Assistant to the Chief of Engine and Plane Maintenance Section, Supply Group to September 7, 1919.

Transferred to the Air Depot at Fairfield, Ohio, he was on duty as Engineer Officer to January, 1920, and Commandant of the Stockkeepers School until October 8, 1921, when he was assigned to the command of the Little Rock, Ark., Air Intermediate Depot. In September, 1922, he sailed for duty in the Philippines, where he commanded Kindley Field and the 2nd Observation Squadron until March, 1923, and Nichols Field and the 4th Composite Group to September, 1924. Upon his return to the United States, he served as Commanding Officer, 7th Division Air Service, Marshall Field, Fort Riley, Kansas, for eight months. For the last three months of this period he also assumed the duties of Commanding Officer of the 16th Observation Squadron and of Richards Field, Kansas City, Mo.

From September, 1925, to March, 1926, Col. Weir was on duty as student at the Army Industrial College, Washington, D.C., and then as Procurement Planning Representative, Air Service, New York City, to August 23, 1929, when he was assigned as student at the Air Corps Tactical School at Langley Field, Va. His graduation from this school in June, 1930, was followed by a two-year period of duty as student at the Command and General Staff School at Fort Leavenworth, Kansas.

Following his graduation from Fort Leavenworth, Col. Weir served as an instructor at the Infantry School at Fort Benning, Ga., until September, 1936, when he was ordered to duty in Panama.

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PHYSICAL EFFECTS IN ALTITUDE FLIGHTS

In a memorandum report prepared in the Engineering Section of the Air Corps Materiel Division on the physiological effects of flight in the Transcontinental and Western Air high-altitude Northrop Gamma airplane at altitudes above 30,000 feet, the conclusions were stated as follows:

a. The oxygen equipment used in the Northrop Gamma airplane was capable of maintaining normal human efficiency to altitudes of 35,500 feet and above 30,000 feet for a period of 1-3/4 hours only under conditions of almost complete inactivity. A marked degree of oxygen-want existed above 30,000 feet, such that a small drop in oxygen pressure or moderate activity produced a comatose condition. This equipment, while it operated satisfactorily and is the most efficient of its kind, is not satisfactory for routine military or commercial use at altitudes above 30,000 feet because of the method of administration, because of the narrow margin of safety and because of the chronic oxygen-want which results in ultimate inefficiency of personnel, followed by undue fatigue and physical illness. It is not satisfactory for military use due to the fact that liquid oxygen is not readily available in war.

b. The sudden removal of the oxygen supply at 30,000 feet produces gross mental and physical inefficiency in from 30 to 60 seconds and induces complete unconsciousness in 60 to 90 seconds.

c. A descent from 30,000 feet at the rate of 2,000 feet per minute without oxygen results in unconsciousness after 90 seconds and gross inefficiency for nine minutes or until about 12,000 feet is reached.

d. Severe oxygen-want may cause mental retardation and confusion for 30 minutes after the oxygen-want has been relieved.

e. Ascent to 30,000 feet and above at a rate of 1,000 feet per minute may cause joint and muscle pains of unknown origin.

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AUTOGIRO ACTIVITIES AT FORT SILL

The Y G 1 A Autogiro is still undergoing test under the direction of the Autogiro Board of the Field Artillery School at Fort Sill, Oklahoma. Due, however, to adverse weather conditions during the last few weeks and maintenance troubles, very little has been accomplished since the latter part of December. The News Letter Correspondent hopes that the maintenance mechanical troubles will be ironed out in the near future and maintenance troubles will settle down to a mere routine.

During the middle of January, Mr. Kellett, of the Kellett Autogiro Co., was an overnight visitor at Fort Sill.

One of the three pilots now on duty with the autogiro at Fort Sill will be ferried to the Kellett factory at Philadelphia in the near future to take delivery on another autogiro, to be ferried to Langley Field, Va.

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The long anticipated event, namely, the arrival at Fort Sill from Wright Field, Ohio, of the YG1A, came off on December 8th. The autogiro or "Jeep," as it is better known to the enlisted men, was piloted by Lieut. E.S. Nichols, Air Corps, of Langley Field. The "Jeep" was welcomed by quite a large crowd, including the Commandant and higher ranking officers of the Field Artillery School, civilians from Lawton, Okla., numerous newspaper reporters and photographers. Lieuts. Gregory and Nichols, aptly dubbed the "Windmill Salesmen," were on detached service at several stations carrying out tests with the "Jeep" before coming to Fort Sill with it. Their mission at this station is to carry out various tests in artillery adjustments, reconnaissance tests in artillery adjustments, etc., with a board of officers from the Field Artillery School to determine the suitability of the "Jeep" as an observation plane to work with the Field Artillery.

Says the News Letter Correspondent: "The 'Jeep' will remain here, on test, for a period of about six weeks, but to date, after numerous tests, it is not known whether or not the 'windmill salesmen' have sold their pet to the Artillery."

Our Correspondent adds that the two 'windmill salesmen' mentioned above were joined by another budding 'salesman' on December 30, 1936, when Lieut. Snyder arrived from Brooks Field, Texas, for three months instruction with the "Jeep."

A NEW AIR CORPS ACT PROPOSED

Under the provisions of a Bill, H.R. 3151, 1st Session, 75th Congress introduced in the House of Representatives, January 18, 1937, by Hon. James Mark Wilcox, of Florida, there is created under the Secretary of War an Air Corps, to be known as the United States Air Corps, to consist of the Regular Air Corps, the National Guard air units and personnel while in the service of the United States, and the Air Corps Reserve.

Section 2 of this Bill provides that the mission of the Air Corps shall be to establish and maintain the air power of the United States, thereby providing the aerial defense for the continental United States, its foreign possessions, and its dependencies; to provide the necessary aerial defense required along the sea and land frontiers at cities and populous districts and at points vital to the national defense in the continental United States, its foreign possessions, and its dependencies; to cooperate with the air units of the United States Navy and Marine Corps; and to give support to the United States Navy and Marine Corps.

Section 3 charges the Air Corps with all the duties and responsibilities, not inconsistent with the provisions of this Act, heretofore assigned to the Air Corps of the United States Army. It shall be the province and duty of the United States Air Corps to develop, procure, store, issue, operate and maintain all aircraft and aircraft accessories, apparatus, and instruments used in connection with aircraft, all ground equipment and appliances of every sort and description necessary in connection with aircraft required by the Air Corps or any other agency of the War Department. The United States Air Corps shall be charged with the responsibility of the following: Aerial operations carried on from land bases in the continental United States, its foreign possessions, and its dependencies and extending over the seas within the operating range of aircraft; aerial operations of expeditions conducted under the jurisdiction of the War Department; preparation of plans for the mobilization and employment of the Air Corps in time of emergency; procurement, assignment training, schooling, promotion, elimination,and retirement of the military personnel of the Air Corps; training and operation of all Air Corps units except those specifically detached for service with the Army; tactical, technical training, and administrative inspection of all Air Corps personnel units and stations; preparation and submission of estimates covering the entire cost of the Air Corps; collection and dissemination of information relating to aeronautics; preparation, procurement, production and distribution of aerial maps for the Air Corps; construction and maintenance of all buildings and grounds, flying fields, and landing and take-off areas required by the Air Corps; maintenance and operation of all transportation equipment and facilities required by the Air Corps, including water, motor, rail, and animal-drawn; operation and maintenance of all air-transportation equipment and facilities required by the War Department; installation, operation, and maintenance of all communications facilities, including telegraph, telephone, and radio, at the Air Corps stations or required by Air Corps units; and printing of all technical literature, special forms and other documents peculiar to the Air Corps.

Section 4 provides that, at the direction of the President, personnel, units, or detachments of the Air Corps may be detached for service with the Army, Navy, or Marine Corps, and, in a similar manner, personnel, units, or detachments of the Army, Navy, or Marine Corps, may be detached for service with the Air Corps: *Provided*, That when such personnel units or detachments are so detached, they shall be under the command of the designated commander of the forces to which attached.

Under Section 5, the regular Air Corps shall consist of one Chief of Aviation with the rank of air marshal; two vice marshals as Assistant Chiefs of Aviation, one of whom shall command the Air Force containing the combat units of the Air Corps within the continental United States and the other shall be charged with the provision of all the personnel and material requirements of the Air Corps; twenty-five air commodores, four thousand five hundred officers in grades from colonel to lieutenant, one hundred warrant officers, and forty-five thousand airmen, such part of whom shall be organized into an Air Force and such other tactical units as the President may direct. There shall be such clerical assistants, inspectors, technical experts, scientists, special agents, and other civilian personnel as may be required from time to time and authorized by the Secretary of War. For the initial organization the members of commissioned and enlisted personnel of the regular United States Air Corps shall be that authorized for the Air Corps of the Army as of January 1, 1937.

Under Section 6, providing that appointments and promotions of noncommissioned personnel shall be made by the President, by and with the advice and consent of the Senate, the numbers in the various grades below the rank of air commodore, except in the grade of lieutenant, shall not exceed the following percentages of the total authorized commissioned strength of the regular United States Air Corps: Colonels, 3 per centum; lieutenant colonels, 4 per centum; majors, 10 per centum; captains, 20 per centum. Commissioned officers of the regular Air Corps, except as hereinafter otherwise provided, shall be appointed and commissioned as follows:

(1) From graduates of the United States Military and Naval Academies, as lieutenant.

(2) From graduates of the United States Air Academy as provisional lieutenants for a period not exceeding three years, at the end of which time they may be commissioned in the regular Air Corps in the grade of lieutenant with rank from the date of appointment as provisional lieutenant.

(3) From among the commissioned personnel of the Army, Navy, Marine Corps, or Coast Guards: *Provided*, That such officers shall be detailed to the Air Corps for a period not exceeding two years, at the end of which time they may

be commissioned in the regular Air Corps in the grade of lieutenant.

(4) From warrant officers and airmen of the regular Air Corps under such regulations as may be prescribed by the Secretary of War.

(5) From officers and airmen of the Air Corps Reserve under such regulations as may be prescribed by the Secretary of War.

(6) From civil life, under such regulations as may be prescribed by the Secretary of War, as provisional lieutenant for a period not exceeding three years, at the end of which time they may be commissioned in the regular Air Corps in the grade of lieutenant with rank from the date of appointment as provisional lieutenant: Provided, That if at any time during this period of three years such lieutenant fails to qualify as a flying officer and is not desired for retention in the Air Corps as a nonflying officer, he shall be honorably discharged from the service.

Upon recommendation of the Chief of Aviation and subject to the approval of the Secretary of War, any officers holding commissions in the Army shall be eligible for transfer to, appointment, and commission in the regular United States Air Corps, without examination, in the grade in the regular Air Corps corresponding to the grade held in the Army at the time of transfer. Except as otherwise herein provided any officer of the Army transferred to or detailed in the Air Corps may be transferred or returned to the branch of the service from which he was transferred or detailed without loss in file as if he had not been so transferred or detailed. Except as otherwise herein provided, any officer originally permanently commissioned in the Air Corps and within one year fails to qualify as a flying officer and who is not desired for retention in the Air Corps as a nonflying officer, shall be transferred to the Army.

The increase to the full authorized strength of the United States Air Corps shall be made within five years from the date of the passage of this Act in such increments as the President may direct: Provided, That no increment shall be less than 15 per centum of the whole authorized strength. The original vacancies below the grade of air commodore created by this Act shall be filled as follows: First, by transfer or original appointment as hereinbefore provided; second, by promotion of the officers so transferred or appointed. The original vacancies below the grade of air commodore not filled by transfers or appointments hereinbefore provided for shall be filled by the promotion of the senior officer of the next lower grade: Provided further, That the percentage of officers in each grade shall not exceed the percentages hereinbefore provided as applied to the strength authorized for the Air Corps for each fiscal year until the full authorized strength is reached. Vacancies other than original vacancies shall be filled as they occur by promotion of the senior officer of the next lower grade. Officers in each grade in the regular Air Corps shall take rank in that grade according to the length of actual commissioned service in the service of the United States. Commissioned service, in the case of graduates of the United States Military Academy and the United States Naval Academy shall be considered to have commenced on the date of graduation from said academies. In the Air Corps at no time shall more than 10 per centum of the current authorized number of commissioned officers in each grade below that of air commodore and above that of lieutenant be nonflying officers. No officer shall exercise command over flying units except a flying officer. The President shall annually convene a board of not less than three officers of the Air Corps of the grade of colonel or above which shall arrange all officers in the regular Air Corps in two classes - namely, class A, consisting of officers who should be retained in the service, and class B, of officers who should not be retained in the service. Officers of Class B will be separated from active service as now provided for similar cases in the Army. The Chief of Aviation shall be appointed as such with the rank of air marshal by the President, by and with the advice and consent of the Senate, for a period of four years, from officers in the grade of colonel or above, at the end of which time he shall be retired from active service. Appointments as vice air marshal shall be made by the President, by and with the advice and consent of the Senate, from officers in the grade of air commodore for a period of four years, at the end of which time if not selected for further promotion they shall be retired from active service.

Appointments as air commodores shall be made by the President by and with the advice and consent of the Senate from among officers of the Air Corps in the grade of colonel: Provided, That if it shall be necessary to select officers otherwise than by seniority in the grade of colonel those officers skipped by such selection shall be retired from active service: Provided further, That officers now commissioned as major generals and brigadier generals in the Air Corps of the Army shall be recommissioned upon passage of this Act as air commodores and vice air marshals in the United States Air Corps for the remainder of the term for which they are now appointed. Thereafter these vacancies shall be filled as hereinbefore provided.

Section 7 establishes the grade of cadet to rank next below the grade of lieutenant and with the grade of cadet as now established in the Army. The grade of cadet shall be limited to trainees at the United States Air Academy, and the pay and allowance thereof shall be as now provided by law for flying cadets of the Army.

Prescribing that there shall be not to exceed 100 warrant officers, Section 8 provides that appointment shall be made by the Secretary of War from warrant officers transferred from the Army and from the master grade in the United States Air Corps under such provisions as the Secretary of War may prescribe. Warrant officers shall have the pay and allowances as now prescribed for warrant officers of the Army and shall take rank next below that of cadet and among themselves according to dates of their respective warrants.

Section 9 provides that until July 1, 1938, the percentages in grades and ratings among the enlisted personnel of the regular Air Corps shall remain the same as at present authorized for the Air Corps of the Army, and subsequent thereto the percentages of grades and ratings shall be prescribed from time to time by the Secretary of War within the limit of current appropriations. Except as hereinafter provided, enlisted men of the Army may, prior to July 1, be discharged and reenlisted for a period of four years, or, if they so elect for a period not greater than the unexpired portion of their current enlistment, in a corresponding grade in the regular Air Corps. The term of enlistment in the regular Air Corps shall be four years. The enlisted personnel of the regular United States Air Corps shall be arranged in seven grades with such designation of each grade as the Secretary of War may from time to time prescribe. The pay and allowances and flying pay of airmen in the regular Air Corps shall be the same as for corresponding grades and ratings in the United States Navy. For all purposes now authorized by law giving credit for enlisted service, full credit shall be given for the time served in the Army, Navy, Marine Corps, or Coast Guard, in completing service under enlistment in the regular Air Corps. The increase to full authorized strength of forty-five thousand airmen shall be made in five approximately equal annual increments.

For the purpose of forming an adequate Air Corps Reserve, the Secretary of War (under Section 10) shall organize reserve units in such numbers and at such places as he in his discretion may designate, and he may assign to any designated unit such personnel of the active force and such equipment and supplies, including aircraft, as may be necessary in accordance with the purpose of the reserve unit. Reserve units authorized under the provisions of this Act shall be organized and designated in a manner similar to those in the regular Air Corps. Except as hereinafter provided, all persons now holding commissions in the Reserve of the Army, Navy, Marine Corps, or Coast Guard shall, for a period of one year after the passage of this Act, be eligible for appointment in the Air Corps Reserve in a rank corresponding to and not higher than that held in the Reserve of the Army, Navy, Marine Corps, or Coast Guard at the time of the passage of this Act. The commissions of all officers of the Air Corps Reserve shall be in force for a period of five years unless sooner terminated in the discretion of the President. The Air Corps Reserve shall consist of an officers' reserve and an enlisted men's reserve. The President shall be authorized to appoint and commission as Reserve officers of the Air Corps, in all grades up to and including that of colonel, such citizens as, upon examination prescribed by him, shall be found physically, mentally, morally, and professionally qualified to hold such commissions. The proportion of officers in grades above that of lieutenant in the Air Corps Reserve shall not exceed the proportion for the same grades in the regular Air Corps. Promotions of officers of the Air Corps Reserve shall be subject to such regulations as the Secretary of War may prescribe. In time of actual or threatened hostilities, the President may order personnel of the Air Corps Reserve to active duty with the regular Air Corps. While such reserves are on such duty they shall exercise commands appropriate to their grades and ratings as provided for the Regular Air Corps, and shall be entitled to pay and allowances of the corresponding grades in the regular Air Corps from the date upon which they shall be required, by the terms of their orders, to obey the same. To the extent provided from time to time by appropriations for this specific purpose, the Secretary of War is authorized to order reserve personnel to active duty for instruction for periods not to exceed thirty days in any one calendar year, and while so serving they shall receive the pay and allowances of their respective grades in the regular Air Corps. With the consent of the personnel concerned, and within limits of funds available for the purpose, periods of active duty for reserve personnel may be extended as the Secretary of War may direct. Reserve officers and reserve airmen called to active duty for periods of not less than one year shall be eligible for retirement privileges and retired pay the same as officers and airmen of the regular Air Corps for physical disability only, not the result of their own misconduct, incurred in line of active duty as the result of the operation of aircraft.

Sections 11 and 12 deal with the assignment of personnel of the Air Corps for duty with the embassies, legations and diplomatic representatives of the United States in foreign countries and the detail of officers and enlisted men to assist the governments of the republics of North America, Central America and South America, and the Republics of Cuba, Haiti and Santo Domingo, upon the application of these governments and whenever in the President's discretion the public interests under such a course is advisable.

Section 13 provides that until such time as other laws are enacted the Air Corps shall be governed by existing laws and regulations governing the War Department and the Army, except as otherwise provided in this Act.

Under Section 14, all civilian employees of the Army Air Corps and other War Department agencies engaged on duty exclusively pertaining to functions of the Army Air Corps are transferred to the Air Corps at their present grades and salaries. All unexpended balances of appropriations made for purposes in connection with the Air Corps of the Army available for obligation or expenditure on the date this Act becomes effective are hereby transferred to and made available to the Air Corps for obligation or expenditure, respectively, for similar purposes, and all obligations incurred against such appropriations prior to such date shall concurrently become obligations of the Air Corps. The Secretary of War shall be and is hereby directed to transfer and deliver to the Air Corps all aircraft now in use by the War Department; all lands and improvements to lands, docks, wharves, buildings, repair shops, warehouses, and all other property now at Air Corps bases and stations or charged to Air Corps units, the responsibility for the procurement, supply, and maintenance of which is by this Act charged to the Air Corps appropriations; and to make equitable distribution to the Air Corps of all means of transportation, including animals, boats, and automobiles or other vehicles now in use or on hand, and all materials, parts, machinery, appliances, and equipment held for the maintenance thereof. Each and every function, authority, power, duty and jurisdiction of whatsoever character it may be, insofar as it relates to aeronautics and the technical maintenance and operation thereof, now vested in any other War Department agency, shall become vested, and hereafter remain vested, in the United States Air Corps, except such as may be necessary for the operation and maintenance of units, detachments, or personnel of the Air Corps that may be detached for service with the Army, Navy, Marine Corps, or Coast Guard: Provided, That in order to carry out the provisions of this Act the President is hereby authorized to submit as soon as practicable to the Congress revised estimates for the fiscal year 1938 for the War Department, making such changes in estimates already submitted or appropriations already made for the War Department as will adjust such estimates or appropriations to the provisions of this Act, and also initiate such additional estimates as may be necessary, making adequate and necessary provisions for the Air Corps for the fiscal year 1938.

Sec. 15 provides that the provisions of existing law and regulations relating to the award of medals of honor and all other medals and crosses to officers and enlisted men by the Army be amended to include officers and enlisted men of the United States Air Corps.

Under Section 16, the Secretary of War is authorized to fix, by rules and regulations; for military reasons, prohibited areas over which aircraft shall not fly, and to include in these rules and regulations descriptions of and, if necessary, maps showing prohibited areas.

The benefits of the War Risk Insurance Act of October 6, 1917, as amended, are extended to include the military personnel of the United States Air Corps.

The Chief of Aviation shall annually, at the close of each fiscal year, make a report in writing to the Secretary of War setting forth the status of the Air Corps and giving an account of all moneys received and disbursed and describing the work done by the Air Corps.

Commissioned officers of the Air Corps shall be detailed to and be members of all joint agencies of the War and Navy Departments considering matters directly bearing upon the national defense.

The War Department shall furnish to the Air Corps such supplies and material and services, by detail or otherwise, as the Secretary of War may direct, including medical, finance, ordnance engineer, adjutant, chemical, signal, legal, quartermaster, chaplain, and the appropriations of the several War Department branches furnishing supplies or materials under authority of this provision shall be reimbursed for the cost thereof as a charge to any funds made available to the Air Corps for the respective purposes of this or any other Act.

The necessary liaison with other national defense activities shall be established by the detail of such officers as the Secretary of War may prescribe, with the Army, Navy, Marine Corps and Coast Guard.

Officers, warrant officers and enlisted men of the Air Corps and of the Army shall receive an increase of 50 per centum of their pay when by orders of competent authority they are required to participate regularly and frequently in aerial flight for training, technical, or administrative purposes, and when, in consequence of such orders, they do participate regularly and frequently in aerial flights as defined by such Executive orders as have heretofore been, or may hereafter be promulgated by the President.

The uniform of the United States Air Corps shall be that prescribed by the Secretary of War from time to time.

There shall be established at such place as the President may prescribe an Air College for the higher education of Air Corps officers and such other officers of the Army, Navy, Marine Corps, and Coast Guard as may be designated. This Air College shall perform the same functions in respect to the perpetuation of the air power of the United States as are now performed by the Army and Navy War Colleges with respect to military power and naval power.

The name of the present Army Air Corps training center, San Antonio, Texas, is hereby changed to the United States Air Academy. Candidates for training at this Academy must be graduates of an accredited college or possess the equivalent educational qualifications. The number of trainees at this institution shall be determined by the Secretary of War within current appropriations for the purpose.

Section 17 defines the following terms as used in this Act:

The term "aircraft" means any contrivance now known or which shall hereafter be used, designed, or invented for navigation of or flight in the air except a parachute or other contrivance designed for such navigation but used primarily as safety equipment. The term "flying unit" means any military organization responsible for the operation of aircraft for any military purpose whatsoever.

The term "flying officer" means any commissioned officer of the Air Corps who has been granted a flying rating in the Army, Navy, Marine Corps, or Coast Guard pursuant to the regulations effective in the department in which serving when so raised, or any commissioned officer of the Air Corps who may hereafter be granted a flying rating.

The term "airman" means an enlisted man of the Air Corps.

The rank of air marshal corresponds to that of general or admiral.

The rank of vice air marshal corresponds to that of major general or vice admiral.

The rank of air commodore corresponds to that of brigadier general or rear admiral.

The rank of lieutenant in the United States Air Corps shall be but one grade, the pay and allowances of which shall be the same as that of first lieutenant in the present Air Corps of the Army.

Section 18 provides that if any section or provision of this Act shall be held to be invalid, it is hereby provided that all other sections and provisions of this Act, not expressly held to be invalid, shall continue in full force and effect.

Section 19 makes this Act effective on and after July 1, 1937, and provides that all Acts or parts of Acts, including Section 13A of the Act of Congress, approved June 4, 1920, amending the National Defense Act, contrary to the provisions of this Act or inconsistent therewith, be, and the same are hereby, repealed.

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Accuracy Plus

(Continued from Page 15)

able, the supplies were dropped. "And so great was the accuracy of the bombing team," declares the News Letter Correspondent, "that one of the free bundles dropped through the roof onto the kitchen table. Now that, gentlemen, demonstrates technique."

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GOOD WILL FLIGHT TO COLOMBIAN REPUBLIC

A formation flight of five new B-10B planes belonging to the 7th Observation Squadron cleared the France Field, Panama, Airdrome, bound for Bogota, Colombia. The first stop enroute was at Medellin, Colombia, some 416 miles from the Canal Zone. There the planes were refueled and remained on the ground for about one hour, during which time the personnel of the flight were greeted by high officials of that town. After the planes had been serviced by the enlisted men, with the cooperation of a few of the Pan American Airways employees stationed at the field, the flight proceeded to the capital of the country.

Due to the high mountains on the route from Medellin to Bogota, it was necessary for the pilot to maintain a very high altitude in order to clear some of the high snow-covered peaks. Arriving over Bogota, the flight personnel noted the rather unusual location of this capital city - on the side of a mountain over 8,700 feet above sea level. Bogota, with a population of about 300,000, has an entirely different climate than the Canal Zone, although it is in the tropics and much closer to the equator. Because of the rarefied condition of the atmosphere, the officers and enlisted men of the flight found it difficult to breathe freely in the strange air.

Arriving over Bogota, Major Willis R. Taylor led the squadron in perfect formation in a review over the capital in salute to the Colombian government. At the Municipal Airport, Scadta Field, a Colombian guard of honor was drawn up awaiting the landing of the planes. The entire flight was welcomed by the high officials of the Colombian government. The officers and enlisted men were escorted to the Granada Hotel, the most luxurious in the city, where they were quartered for their short stay. Every courtesy and respect were shown to the men who participated in this Good Will flight.

On the morning of December 17th, the flight proceeded to Cali, Colombia, where the primary military and flying school is located. Here, also, the flight was received with as great a welcome as was accorded it at Bogota. Incidentally, the officials of this school are composed mainly of former American Army Air Corps men. The town of Cali appeared to be a rather pleasant place, the climate of which is about as ideal as that of San Jose, Costa Rica, which in general is much better than that of Bogota.

After remaining overnight in Cali, the flight left on the morning of the 18th on a non-stop journey to France Field.

Officers who participated in this Good Will flight were: Majors Willis R. Taylor, flight commander; Charles R. Glenn, flight surgeon; Captain Charles A. Ross; 1st Lieuts. John A. Feagin, navigator; Isaac W. Ott, engineering officer; Richard M. Montgomery; Ernest P. Gabel, billeting officer; Thomas B. Hall, supply officer; James D. Underhill; Frederick W. Ott; David D. Graves; William H. Maverick; William D. Eckert, and 2nd Lieut. William B. Keese, operations officer. The enlisted men on the flight were: Crew Chiefs - Sergeant Henry T. Swanson, Corporal Guy H. Groco, Jack P. Merril, Joseph J. Benedetti; radio operators - Joseph J. Zizzi and Edward W. Pictras.

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NAVIGATION FLIGHT BY ADVANCED FLYING STUDENTS

Orders were issued by the Secretary of War, authorizing the Maintenance and Navigation flight of the present class at the Advanced Flying School, Kelly Field, which is expected to graduate on February 17th, next.

This flight, which culminates the year's flying training, is designed to give the student individual navigation over the Federal Airways, using all types of aids to navigation, together with group navigation, in formation, and maintenance experience while on field maneuvers.

The flight schedule for this class has been arranged to include stops at a General Headquarters Air Force station, the Air Corps Tactical School, and several colleges having R.O.T.C. units. The trip is expected to prove of value not only by its own training but by observation of actual service operations. The stops at the various colleges will allow mutual exchange of ideas between the students, and give the ROTC opportunity to inspect the visiting Air Corps Advanced Flying School students.

All sections are scheduled to depart from Kelly Field on February 2nd for Barksdale Field, Shreveport, La. They will inspect the field there in the afternoon and remain overnight. All except Pursuit are routed direct and at intervals for the purpose of individual navigation. The Pursuit Section will go via Hensley Field, Dallas, individually.

On the second day all sections fly formation to Maxwell Field and thence to Tuscaloosa, Ala., where they will visit the University of Alabama and remain overnight.

On the third day, the Attack Section goes to Maxwell Field; Observation flies to Athens, via Birmingham, Ala.; Pursuit and Bombardment to Athens, Ga., via Atlanta, Ga. These three sections will remain overnight at the University of Georgia.

A mass flight to Atlanta will be made on the fourth day to visit the Georgia School of Technology.

On the fifth day, all sections fly in mass formation to Auburn, Alabama, where they visit the Alabama Polytechnic Institute until 3:00 p.m. They proceed from there to Maxwell Field to visit the Air Corps Tactical School.

The sixth day will be spent in maintenance of the airplanes and inspecting the Tactical School.

On the seventh day all sections in formation will fly to Baton Rouge, via New Orleans, to visit Louisiana State University, remaining overnight. Eighth day, return to Kelly Field via Houston or Galveston.

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WINTER TESTS OF EQUIPMENT BY GHQ AIR FORCE IN SELFRIDGE FIELD AREA

The functioning of the trim and speedy new airplanes with which the General Headquarters Air Force of the U.S. Army is equipped will be tested under severe winter conditions in the Selfridge Field, Michigan, area from February 1st to 24th, 1937. Details of the tests were just made public by Brigadier General Henry C. Pratt, commanding the 2nd Wing of the GHQ Air Force, Langley Field, Va., whose command is charged with responsibility for conducting the tests.

"We are not only going to test the performance of our Pursuit, Attack and Bombardment airplanes under severe winter conditions," General Pratt declared, "but we will test the efficiency of ground and flying personnel under these conditions and test new flying clothing, lubricants and maintenance equipment."

Over 300 enlisted men and 100 officers will converge on Selfridge Field from all points as far distant as Barksdale Field, La.; Mitchel Field, L.I., N.Y., and Langley Field, Va. Selfridge Field will furnish one squadron of the 1st Pursuit Group as a participating unit, and Selfridge Field has been designated as the operating base.

The participating units have been organized into the "Provisional Cold Weather Equipment Test Group," and Colonel Walter H. Frank, Commanding Officer, Mitchel Field, has been designated to command the Provisional Test Group, which will consist of:

27th Pursuit Squadron, Selfridge Field,
  Major Warren R. Maxwell, Commanding.
8th Attack Squadron, Barksdale Field, La.
  Major Lester Maitland, Commanding.
1st Bombardment Squadron, Mitchel Field, N.Y.
  Major Claude Duncan, Commanding.
Hq. and Hq. Detachment, Provisional Cold
  Weather Test Group, Mitchel Field, N.Y.

All personnel and supplies for the tests will be transported by air in nine new Douglas Transport 16-passenger airplanes and two Lockheed Electras, in addition to the Bombardment, Pursuit and Attack airplanes of the tactical units.

The necessity for conducting winter tests of cold weather equipment was realized some years ago, and such tests have been held during several winters in various localities from New England to Montana. Cold weather requires the use of lubricants which will not congeal and which at the same time retain their lubricating qualities and thus permit the proper functioning of the various mechanisms and gadgets essential to military airplanes. Years ago skiis as a substitute for landing gears were tried, but have been abandoned in favor of conventional wheels on cleared runways. Protective clothing for airplane combat and maintenance crews presents a problem toward the solution of which much progress has been made. The last winter tests were held in New England in February, 1936, and the present tests are a continuation. Complete answers to all the problems involved will probably not be secured for several years to come.

Officers and civilian engineers from the Materiel Division of the Air Corps at Dayton, Ohio, will be present to supervise the numerous tests of equipment to be conducted.

Present plans call for operations being conducted simultaneously from the Selfridge Field Gunnery Camp, Camp Skeel, Oscoda, Michigan, and from the base at Selfridge Field.

It is anticipated that numerous high ranking officers of the Army will visit Selfridge Field on visits of inspection during the tests. These will probably include Major General Frank M. Andrews, Commanding General, GHQ Air Force, Langley Field, Va.; Brigadier General Henry C. Pratt, Commanding General, 2nd Wing, GHQ Air Force, Langley Field, Va.; Brigadier General Gerald C. Brant, Commanding General, 3rd Wing, GHQ Air Force, Barksdale Field, La., and possibly Major General Oscar Westover, Chief of the Air Corps, and Major General Charles D. Herron, commanding the 6th Corps Area, Chicago, Ill.

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Arrangements were completed by the Air Reserve officers of the Second Corps Area and the Reserve officers of the New York Air Corps Procurement District for a dinner at the Hotel Algonquin in New York City, on Tuesday, February 2nd, in honor of Major General Oscar Westover, Chief of the Air Corps, and Colonel Charles F.H. Johnson, Specialist Reserve, Chief of the New York Air Corps Procurement District.

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Special Orders of the War Department, recently issued, direct the following-named Air Corps officers to proceed to the Philippines for duty:

Captain Jack Greer, from Langley Field; 1st Lieuts. Charles H. Anderson and Ernest K. Warburton, Selfridge Field; Harry N. Burkhalter, Jr. Frederick E. Calhoun, David N. Motherwell and Fred O. Tally, Barksdale Field; Talma W. Imlay, Mark K. Lewis, Jr., Randolph Field.

To Panama Canal Department: 1st Lieuts. Millard Lewis, Hamilton Field; Robert M. Lee, Douglas T. Mitchell, Barksdale Field; Donald B. Smith, Randolph Field; Robert F. Travis, Langley Field; 2nd Lieut. William H. Gist, Jr., Langley Field.

War Department Special Orders recently issued direct the retirement of Captains Armor S. Heffley and Harold R. Rivers, January 31, 1937, for disability incident to the service.

GHQ AIR FORCE PLANES USED IN GLOOD AREAS

Airplanes of the Army's General Headquarters Air Force are playing an increasingly important role in the rescue and relief of the distressed persons in the flood areas.

Responding to an urgent call from the Corps of Engineers, General Malin Craig, Chief of Staff of the Army, has directed Major General Frank M. Andrews, Commanding General of the GHQ Air Force, to furnish three photographic teams in as many planes for the survey of flood conditions in the stricken Ohio Valley, and perhaps later on in the threatened Mississippi River valley area.

Two of the photographic teams have already left for Dayton, Ohio, where they will report to the Commanding Officer of the Air Corps Materiel Division at Wright Field. These two teams are from the Eighth Photographic Section at Mitchel Field, Long Island, New York, and the Second Photographic Section at Langley Field, Va. The third plane, from the 5th Photo Section at Barksdale Field, Shreveport, La., will be held on the "alert" to await further contingencies. It is in a strategic position at Shreveport in case the river rises dangerously near the Delta.

Another Air Force plane has already done much photographic work in connection with the flood.

Returning from Wright Field with the speedy Douglas Bomber belonging to the Headquarters Squadron of the GHQ Air Force, based at Langley Field, Major Eugene L. Eubank, Squadron Commander, described the work that the huge fighting craft had accomplished on its errand of mercy during the three days that it had been on detached service in the flood regions. Major Eubank with Lieut. Hugh McCaffery and Sergeant Joseph Moran ferried the plane to Dayton, where it was turned over to the expert photographers from the Air Corps Materiel Division at that station.

"The crew in the plane have been mapping the entire Ohio River valley in the flood area all the way from Portsmouth to its mouth at Cairo, Ill., including its tributaries. The photographers were favored with three days of excellent weather for photography," it was explained. "This is the only plane in the Army Air Force which has sufficient carrying capacity, speed and cruising range sufficient to accomplish a photographic mission of such great magnitude in so short a time.

It is believed that these photographic records, showing water in the actual contours, will be invaluable to Army engineers in their future studies of flood control.

The task of the two Fairchild C-8 photographic planes will be to photograph the levees and other parts of the flood regions so that Army engineers may gain some idea of the breakages which have taken place and the gains and losses which have occurred. These pictures will be used by the Corps of Army Engineers to make a survey of estimates so that necessary measures for controlling the flood and evacuating inhabitants may be undertaken without delay.

Another Langley Field plane, the OA-4, by virtue of its amphibian ability to land in water as well as on land, should prove to be of value in making difficult rescues and ferrying supplies. This Amphibian plane is now at Columbus, Ohio.

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PROMOTION OF AIR CORPS OFFICERS

The following-named Air Corps officers received permanent promotion to the rank indicated: To Lieut. Colonel: George E. Stratemeyer (Temp. Lieut. Colonel), rank from Jan. 1,1937; To Major: John I. Moore (temporary Major), to rank from January 1, 1937; To Captain: 1st Lts. Earl C. Robbins, A.J. Kerwin Malone, Russell Keillor, Ernest H. Lawson, John E. Bodle, Russell Scott, Burton M. Hovey, Jr., Richard E. Cobb, Dale D. Fisher, Henry W. Dorr, Carlisle I. Ferris, Elwood R. Quesada, Willard R. Wolfinbarger, with rank from January 22, 1937, for the first eight captains, and from January 23, 1937, for the last five.

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CHANGES OF STATION OF AIR CORPS OFFICERS

To Selfridge Field, Mich.: Major Willis R. Taylor and 1st Lieut. Robert S. Israel from Panama Canal Department.

To Mitchel Field, N.Y.: 1st Lieuts. Flint Garrison, Jr., and George R. Greer from Panama; Major Theodore J. Koenig (Captain) from duty as Assistant Military Attache for Air to Germany, The Netherlands, Denmark and Sweden.

To Fort Riley, Kansas: 1st Lieut. Gerry L. Mason, from Panama.

To Hawaii: Major Ames S. Albro (Captain) from duty as Technical Supervisor, San Antonio Air Depot Control Area.

To Randolph Field, Texas: Major Albert B. Pitts, from Philippines, for duty at Air Corps Training Center.

To Chanute Field, Ill.: 1st Lieut. Richard M. Montgomery, from Panama.

To Barksdale Field, La.: 1st Lieuts. John W. Kirby, Phineas K. Morrill, Jr., Willard R. Shephard, Wycliffe E. Steele, from Philippines.

To Wright Field, Ohio: 1st Lieut. William M. Morgan, from Philippines.

To Langley Field, Va.: 1st Lieuts. Richard S. Freeman, Francis H. Griswold, from Hawaii.

To Patterson Field, Ohio: Captain Signa A. Gilkey, from Wright Field.

To Rome, Italy, for duty as Assistant Military Attache for Air: Captain Jack C. Hodgson, from Bolling Field.

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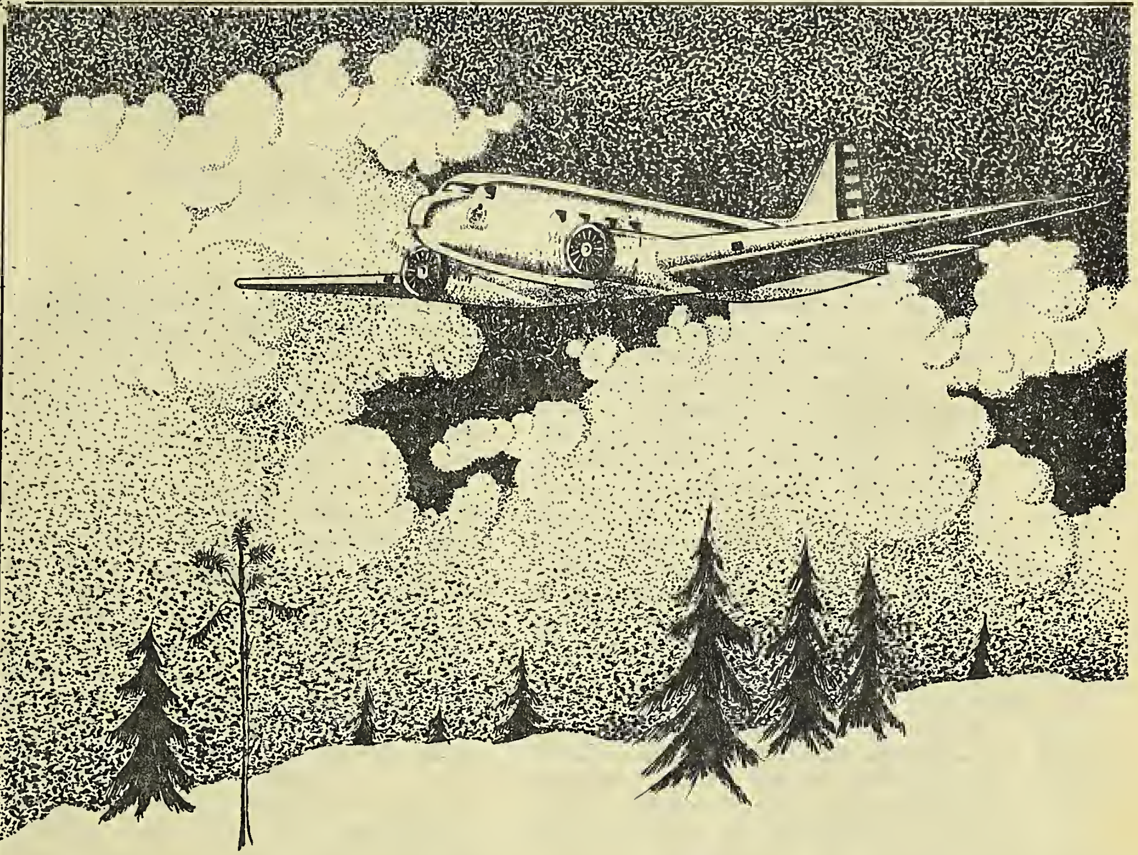
The following-named Air Reserve officers have been placed on active duty for a period of three years at stations indicated:

At Barksdale Field, La.: 2nd Lts. Troy Wm. Crawford, Mangham, La., and Fred Oscar Easley, Jr., Fordyce, Ark., to Jan. 14,1940; A.J. Bird, Jr., Metter, Ga., to Jan. 31, 1940.

To Langley Field, Va.: 2nd Lt. Cyrus Wm. Kitches, Laurens, S.C., to January 31, 1940.

To Hamilton Field, Calif.: 2nd Lt. Francis H. Matthews, Houston, Texas, to January 31, 1940.

To Patterson Field, O.: 2d Lt. Thomas Smith Davis,Jr., Fernandina, Fla., to January 31,1940.



AIR CORPS NEWS LETTER

DUNNINGTON.

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VOL. XX NO.4.

VOL. XX AIR CORPS NEWS LETTER NO. 4.

Information Division
Air Corps
February 15, 1937
Munitions Building
Washington, D.C.

The chief purpose of this publication is to distribute information on aeronautics to the flying personnel in the Regular Army, Reserve Corps, National Guard, and others connected with aviation.

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POWER PLANT LABORATORY UNDERGOES OVERHAULING
By the Materiel Division Correspondent

In order to keep a few steps ahead of power plant development, the Power Plant Laboratory at the Materiel Division, Wright Field, Dayton, Ohio, is now undergoing some general overhauling. Thanks to the foresight of the engineers who originally built our laboratory, it has withstood the rapid progress of the past several years. A thousand-horsepower, combination electric-water brake dynamometer sufficed for engines then under development and gave plenty of room for increase in power from the 200 to 500 horsepower engines up to our present engines in the thousand horsepower class. A 600 horsepower blower fan gave us an airspeed of some 180 miles per hour over the fins of our air-cooled engines, simulating approximately the speeds of airplanes then under development.

We are now going over the thousand horsepower hump, and with it come the added complications of accurate altitude performance testing. To accommodate new developments, we are again taking another look into the future.

Three new combination electric-water brake dynamometers of 3000-horsepower capacity are being installed. A 1500-horsepower centrifugal blower will replace one 600-horsepower fan and step our airspeed from 180 miles per hour up to about 400 miles per hour. Two 600-horsepower centrifugal fans will serve the altitude test stand with similar increase in speeds. Each of the stands will have remote controls over the entire system and with new soundproofed control rooms we will still keep our position as the most up-to-date Power Plant Testing Laboratory in the world.

The above improvements are costing well over one hundred thousand dollars; the power required to run the stands would supply a fair size city with power. This expense will be justified by further development in the power and safety of aircraft engines and pass on the benefits through the military services to our commercial lines and in turn to the general air-minded public.

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SCOTT FIELD IN FLOOD RELIEF WORK

Colonel Frank M. Kennedy, Commanding Officer of Scott Field, Belleville, Ill., is cooperating with Colonel Joseph A. Atkins, at Jefferson Barracks, Mo., in charge of Southern Illinois flood relief, by sending supplies, troops, airplanes and airships to the flood zone a little more than a hundred miles to the east and south. Colonel Kennedy not only supervised the execution of all orders from Colonel Atkins, but also made personal visits to the flood zone by airplane and airship.

Scott Field pilots have made frequent flights daily to obtain information and photographs and to make maps which have been helpful to rescue parties. The TC-14 airship was flown to the flood area on various occasions.

Four complete mobile field kitchens, each manned by a mess sergeant, two cooks and two helpers, have been standing by awaiting orders to proceed wherever needed to establish food stations for flood refugees.

Scott Field's amateur radio station, W9CJH, was active in handling flood relief messages from January 22nd to February 7th - 401 consecutive hours - and working in conjunction with the U.S. Army Radio Net. Private, 1st Class, Frank W. Brashears, its owner-operator, was assisted by Privates Reynold J. Castelli, C.C. Smith, Ben Taylor, Lewis J. Rudy and Fred J. Hicks.

The amateur station was an important link between W9ANR, Army 6th Corps Area Station, and a dozen emergency radio stations in the flooded area, these including W9PSP at Cairo, Ill., and WGBE at Marion, Ill. The station had regular hourly schedules with these stations, making contacts little more than five minutes apart.

During the hours from midnight to 5 a.m., all W9CJH relief traffic, particularly that regarding missing friends and relatives, was rebroadcasted by WEW, a commercial station at St. Louis, Mo.

(Continued on page 15)

THE NEW CLASS AT RANDOLPH FIELD, TEXAS.

The new class which will begin flying training at the Air Corps Primary Flying School at Randolph Field, Texas, on March 1st, next, totals at this writing 112 students, comprising one officer of the Coast Artillery Corps, U.S. Army (1st Lieut. Dabney R. Corum), 9 enlisted men of the Air Corps, 5 enlisted men from other branches of the military service, and 97 candidates from civil life. The enlisted and civilian students will undergo their flying training under the status of Flying Cadets.

The course at the Primary Flying School is of eight months' duration, of which four months are spent by the students on the Primary Stage and four months on the Basic Stage. The instruction on the Primary Stage is given on a training type airplane, known as the PT, and consists of dual instruction, the fundamental flying maneuvers, accuracy work and acrobatics. On the Basic Stage, the student advances to a larger, more powerful and speedier airplane, known as the BT type. In this airplane the student reviews all of the work done on the Primary Stage, but in an airplane with different flying qualities and one which more nearly approaches those employed by Air Corps tactical squadrons. At this Stage he also takes up formation flying, strange field landings, instrument flying under the hood, and day and night navigation flights. The objects sought so far have been perfection in flying technique and the development of headwork.

Students successfully completing the eight months' course at Randolph Field are transferred to the Advanced Flying School at Kelly Field, Texas, where for a period of four months they specialize either in Pursuit, Bombardment, Attack or Observation Aviation, employing service type airplanes.

In addition to intensive flying training in their own specialty, students are also given considerable experience in day and night navigation, instrument flying, and transition to all types of military airplanes available at the Advanced Flying School.

Upon graduation from the Air Corps Training Center, the Flying Cadet is given his "Wings" and the rating of "Airplane Pilot," and is then assigned to extended active duty with a tactical squadron at one of the Air Corps stations in the United States.

In the matter of representation of native sons in the March Class, California leads with 13 students, followed by Texas with 10 and Washington with 8. In the cities represented, Seattle, Wash.; Columbus, Ohio, Chicago, Ill., and Austin, Texas, are tied with three each.

List of Flying Cadets (Civilians)

Bourland, Russell R.	Camden, Ark.
Tillman, Cleburne	Little Rock, Ark.
Tribble, George Stuart	Stephens, Ark.
Hagerman, Elmer D.	Avenal, Calif.
Garman, Ralph Sheldon	Avenal, Calif.
Adams, Robert Starr	Los Angeles, Calif.
Kearby, Neel Earnest	Los Angeles, Calif.
Reedy, Allen Dale	Ontario, Calif.
Iwerks, Franklyn Merrill	San Bernardino, Calif.
Pardee, Elliott Thomas	San Francisco, Calif.
Schubert, Hilmar Bruns	San Francisco, Calif.
Maupin, Robert Norton	Santa Barbara, Calif.
Edmundson, James V.	Santa Monica, Calif.
Alexander, Hugh S.	Winton, Calif.
Hays, MacDonald Herbert	Denver, Colo.
Heintz, Adam Joseph	Greeley, Colo.
Broomfield, John Danridge	Hartford, Conn.
Breathitt, James, III	Washington, D.C.
Clements, Robert E., Jr.	Moscow, Idaho
McPherson, Clarence Edward	Moscow, Idaho
Maloney, Robert G.	Chicago, Ill.
Kummrow, Robert A.	Morrison, Ill.
Snow, Daniel Lloyd	Vienna, Ill.
Flannery, Edward J., Jr.	Winnetka, Ill.
Wanamaker, Martin Eugene	Barnes, Kans.
Spies, Albert Joseph	Hays, Kans.
Woltz, Eugene Carl	Wichita, Kans.
Morris, George William	Bowling Green, Ky.
Harrison, Oliver Cecil	Montgomery, La.
Capitell, Alfred John	Belmont, Mass.
Smith, Dana Andrew	Brookline, Mass.
Proxmire, Theodore S., Jr.	East Boston, Mass.
Howe, Lana Hill	Gardner, Mass.
Ames, Richard Austin	Lynn, Mass.
Noyes, Richard Whitney	Melrose, Mass.
Calucry, Francis David	Battle Creek, Mich.
Cleveland, Parker Menzie	Fort Snelling, Minn.
Marks, Magnus B.	Minneapolis, Minn.
Kruse, Robert Roland	Kansas City, Mo.
Martin, Kenneth Ray	Kansas City, Mo.
Benson, Harry Anderson	Liberty, Mo.
Arndt, Clarence William	Marshall, Mo.
Ott, William Dunnica	University, Mo.
Lambert, Richard Francis	North Platte, Neb.
Glasier, Robert Adolf	Carlsbad, N.M.
Nacrason, Edmund Joseph	Cooperstown, N.Y.
Howard, Orrin Mather	Crown Point, N.Y.
Aronsen, Charles Millard, Jr.	Eltingville, N.Y.
Coupland, Don	Kenmore, N.Y.
Uzdavinis, Walter Alfred	New York, N.Y.
Zipp, Marvin Stoll	Rockville Center, N.Y.
Beverly, Ernest Haywood	Laurinburg, N.C.
Helbert, Lewis Peter	Ashland, Ohio
Brannon, Dale Donald	Columbus, Ohio
Fisch, Frank	Columbus, Ohio
Wasem, Clinton Curtis	Columbus, Ohio
Landis, Frank Calvin	Doylestown, Ohio
Foster, Orland A.	Ada, Okla.
Mason, Robert Julian	Norman, Okla.
Workman, Clyde Lowell	Norman, Okla.
French, Donald James	Eugene, Ore.
Acheson, John Russell	Medford, Ore.
Emmons, Robert Gabel	Medford, Ore.
West, Graham Warren	Portland, Ore.
Rodziewicz, Casimir A.	New Kensington, Pa.
Dwyer, Thomas A.W., Jr.	Philadelphia, Pa.
Anderson, Dale L.	West Pittsburgh, Pa.
Danesi, Marius Caesar	Providence, R.I.
Fineman, Ernest	Providence, R.I.
Watson, Theodore Provost	Anderson, S.C.
Mall, Don W.	Brookings, S.D.
McNickle, Melvin Francis	Vermillion, S.D.
MacNicol, George Mabin	Memphis, Tenn.
Armstrong, Hal Burrage	Austin, Texas
Broadbent, Harry Hartwell	Austin, Texas
Ranck, Nathan Hoover	Austin, Texas
Ceyanes, Lencho	Brownsville, Texas
Vernon, Randall Mitchell	Harlingen, Texas

(Continued on Page 21)

THE COLOMBIAN FLIGHT

Supplementing the article in the previous issue of the News Letter on the above subject, additional data relative thereto was just received from the France Field Correspondent, who goes on to say that a fine opportunity to visit another South American country presented itself not long ago - andopportunity had to knock but once. Under command of Major Willis R. Taylor, of France Field, a flight of five Martin B-10B's proceeded on an aerial journey from France Field, C.Z., to Bogota, Colombia. The purpose of the flight was two-fold - it helped to strengthen the friendly relations already existing between Colombia and the United States and, in addition, it provided valuable experience for Air Corps personnel. The following very complete account of the flight is taken from Major Taylor's diary of the flight:-

Instructions were received from Wing Headquarters in October, 1936, for the 7th Observation Squadron to proceed on an extended navigation flight to Bogota, Colombia, via Medellin, Colombia, on December 14th, returning via the same route on December 17th. The flight, per verbal instructions of the Wing Commander, was authorized to utilize B-10B airplanes. Inasmuch as five airplanes were authorized for the flight, and only 4 B-10B airplanes could be spared from France Field, it was thought it would be both interesting and educational if an extra B-10B plane from Albrook Field, with four officers, could be authorized. In addition, it was suggested that one officer and a flight surgeon from Albrook Field be furnished, and this suggestion was agreed upon.

The flight cleared France Field at 7:30 A.M. December 14th, in partially cloudy and inclement weather, but with a good weather report at Medellin, Colombia, where the first landing was scheduled to be made. Because of these weather conditions, the flight proceeded down the East Coast of Panama to Turbo, Colombia (Pan-American Airways Field at Turbo), thence on a direct line to Medellin. The flight proceeded through the mountainous country over a nine-tenths broken cloud layer, at an elevation of about 11,000 feet. Two check points were picked up through the clouds en route to Medellin. The Medellin landing field is situated at an elevation of approximately 4,000 feet on the south side of a 10,500-foot peak and lower range. The north side of the peak was visible on arrival in the vicinity of Medellin, but the Medellin landing field was closed in. Radio contact had not been established with Bogota, some 150 miles further on, and one of three decisions had to be made, viz: to return to Turbo or France Field; proceed on to Bogota without a weather report, or stay in the vicinity of Medellin for a time in the hope that conditions would clear up. It was decided to wait for a while, and a circle of that immediate area was made. After about 30 minutes, a hole was located in the clouds, through which the flight proceeded to the Medellin Valley, a landing being made at Medellin 3 hours and 20 minutes out of France Field. Here the planes were serviced. A favorable weather report was obtained from Bogota. The ceiling at Medellin was partially broken by this time, and the flight took off at 12:20 P.M., went up through the clouds to about 15,000 feet and a course was laid for Bogota, 150 miles distant. One check was obtained on the Magdalena River en route. Arriving, however, in the vicinity of Bogota, the clouds were broken and a landing was made at 1:40 P.M. The landing field elevation at Bogota is 8,700 feet.

Upon landing at Bogota, the flight was met by the American Minister, Mr. William Dawson; the representative of the President of Colombia; The Minister of War, Dr. Mendoza; and various other Government Officials. The Minister of War stated he was very glad to welcome the personnel of the flight and that President Lopez, of Colombia, had directed that while the flight was in that country they were to be the guests of the Colombian Government. The Director of National Aviation then invited the officer personnel of the flight to the Granada Hotel to meet various government officials, including the Minister of War, and to go through the ceremony of the "Copa de Champagne", or a toast in champagne to one another, which is considered an extremely high honor. That evening the officer personnel were entertained at the home of Captain Clayton C. Jerone, Marine Corps, Naval Attache to the American Legation, to which the members of the Colombian Air Corps were invited and many of the members of the American and European Colonies. On December 15th, a mid-day reception was given for the officers of the flight at the home of the American Minister, Mr. Dawson, which was attended by the Vice-President of Colombia, members of the Cabinet, high officials of the Army and Navy, and the Ministers of all the foreign legations. At this reception the Director of National Aviation, Major Santa Maria, stated that he hoped to have our flight return to France Field via Cali, Colombia, the Colombian Military School of Aeronautics. The American Minister dispatched a cablegram at this time to the Commanding General, Panama Canal Department, requesting authority for the flight to return via that route and stay overnight at Cali. Permission was granted by return cable. After the reception the officers of the flight were taken on a sight seeing tour of the City of Bogota by Colombian Air Officers. There was no official function for all the officers that evening. Major Taylor and Major Charles R. Glenn, flight surgeon, however, were invited to attend the National Theatre with the American Minister in his box, the occasion being a recital of music and poetry by the winners of the National Poetry Contest. President Lopez attended in his box, and during the intermission Majors Taylor and Glenn were presented to the President and his family.

The flight left Bogota on the morning of the 17th at 9:00 o'clock for Cali, Colombia, some 150 miles distant. The intervening range between Bogota and Cali has a high point, en route, Mt. Tolima, altitude 18,500 feet. The mountains were completely covered and it was necessary to take flight to an altitude of approximately 20,000 feet for a few minutes to clear the range, after which the altitude was decreased rapidly down into the Cali Valley, where a landing was made one hour and 10 minutes out of Bogota at the Cali landing field, which is at an elevation of 3,500 feet. The officers of the flight were taken to the Officers' Club at the Cali Air Base and then to the Hotel as guests of the officers of the Air Base. That day at 6:00 P.M., the officers of the flight were entertained by Colonel Liborio Orejuela, Commanding Officer of the Local Fort and Military School "PINCHINCHA", and in the evening the American officers and the Colombian aviation officers were entertained at dinner by Lieutenant John H. Hayden, American Aviation Instructor to the Colombian Government.

The flight left Cali at 10:30 A.M., December 18th, for a direct flight of 365 miles to France Field. This course was intended as a navigation problem since for some 200 miles it lay about 45 miles off shore. France Field was reached 2 hours and 20 minutes after the take-off.

Cooperation was given in radio communication by the PanAmerican Airways at France Field, Medellin, and by the Scadta Airways at Medellin, Bogota, and Cali, Colombia. This was not altogether successful, due probably to the unfamiliarity between the Spanish and American operators and also to the fact that the operators in the planes were cold and uncomfortable due to the high altitude at which it was necessary to fly. Excellent weather reports were obtained, however. Plane operators utilized the S.C.R. 187 set. The interplane S.C.R. 183 set functioned satisfactorily and, although it is designed to work at only from 15 to 20 miles, communication was peculiarly good on this set by voice with France Field at all times, both in the air and on the ground. Incidentally, on the ground at Bogota, in addition to working France Field perfectly on voice, the station at El Volcan (HO7 El Volcan, R.de P.) was worked perfectly on voice. This station is some 650 miles distant.

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FRENCH SPEED FLYER VISITS KELLY

Only 100 hours of flying training are allotted to French flying students at the three military flying schools of France, it was learned here during a short visit at Kelly Field recently by Michel Detroyat, leading acrobatic flyer of France; Michel Wetzig, civilian test pilot, and R.C.Peyronnet de Torres, news correspondent. All are on a tour of inspection of American aircraft manufacturing centers. Students at the Air Corps Training Center here get approximately 300 hours during the year.

Detroyat, winner of the speed race of the National Air Races in Los Angeles, California, last year, and who broke the world's record previously held by Major James H. Doolittle, has been awarded the French Legion of Honor Rosette. He flew the course in a specially built Caudron-Renault racer, which covered the 10-mile laps fifteen times in the record time of 264.261 miles an hour. Doolittle's mark was 252.686 miles an hour, made in 1932. For this feat, Detroyat was awarded the Charles E. Thompson Trophy. He also won the Louis W. Greve trophy.

The French flyers, both of them test pilots for the aviation department of the French government, accompanied by de Torres, have been in the United States for a week. They left San Antonio by commercial plane for New York City, where they went to embark for France.

All three visitors commented favorably on Kelly Field's cleanliness, despite the fact that most of the buildings are of war-time construction. Manifesting considerable interest in the blind flying equipment used by the Air Corps, they stated that they are familiar with the instruments but wanted to compare the types here with those used by the French military flyers.

37TH ATTACK SQUADRON WATER-LOGGED
By the News Letter Correspondent

Because of the continuous bad weather, all Langley Field had to confine work to Squadron duties and "Hangar Flying". At the time of this writing, the field looks like a lake, the road between the main post and Langley Number 2 (the old lighter-than-air area) is covered with water to a depth of approximately six inches, and the balloon hangar, which houses the 37th Attack Squadron, has the appearance of an indoor swimming pool. But all this water handicap does not prevent the 37th's maintenance crews and Engineering Section from taking advantage of the non-flying days to put the A-17's in super-super condition. The writer uses the superlative "super-super" because even when the planes are flying all hours of the day the men keep them in excellent condition. Occasionally, all men have to interrupt their work to rescue little Line Chief Nero from a pool of water that has become a little too deep for him to wade through.

The weather finally cleared enough on January 25th to enable Lieut. Bergquist to go to the Middletown, Pa., Air Depot and fly back his A-17, in which the Air Depot had installed a Type E-4 Radio Compass. He was very well pleased with its operation on the return trip and is anxiously awaiting good weather so that he can conduct further tests. Cadet Russell's plane is now also equipped with a Radio Compass and ready for delivery from M.A.D. It is hoped that all our A-17's will soon have installed this new aid to radio navigation.

We now have ten pilots assigned and attached for our eight planes. The latest addition is Cadet Jones, transferred from the 36th Pursuit Squadron.

The continuous inclemnent weather has initiated heated discussions on icing probabilities. Lt. Day, our Engineering Officer, has launched an investigation on the subject, and with his assistants was seen perusing all known text books on the subject. In addition, he is planning to measure the range of the air heater now installed on A-17's as a basis for determining how much heat to apply under various climatic conditions. We wish him all success, as this investigation may produce some much needed information.

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SEARCH MISSION TO MANAGUA, MICARAGUA

Little or no extra gasoline for a long flight over treacherous jungle, sudden changes in uncertain tropical weather, motor failure with nothing but jungly mountains below - any one of these factors is enough to explain the disappearance of a ship. Perhaps one of these disasters forced pilot F.W. Kingsley down in the steaming jungles of Nicaragua. In any event, when the Bonanza mine, about 150 miles north of Managua, learned that pilot Kingsley had not arrived with his cargo of gold, they immediately put in a call to the government for assistance. As a result, the Nicaraguan government on January 15th, asked for an Air Corps search party.

At 6:15 A.M., the following day, a search flight took off from Albrook Field, en route to Managua, Nicaragua. The flight was composed of six P-12's, two B-6's and one Bellanca C-27, all under command of Maj. G.H. Beverley. The flight reached Managua in the afternoon, and four of the P-12's immediately started the search over the jungles. Shortly after arrival of the Army airmen, another ship belonging to the same company was reported missing.

The weather was poor the entire time, the mountains being clouded over part of the day, and there were many scattered tropical thunderstorms in the valleys. For two days and a half the search went on, without the slightest trace of either of the lost ships. Even with perfect weather conditions, the odds are ten to one that no trace of a crashed ship will be visible, since the tall trees of the jungle are very liable to completely conceal any ship which plunges through them.

On the 20th the flight returned to Albrook Field, due principally to the impossibility of obtaining the proper grade of aviation gasoline at Managua. Although the flight was unsuccessful in finding the lost ships, much valuable experience with flying conditions in Nicaragua was obtained.

Mr. Drew, of the American Legation, as well as government officials, did everything possible to make the flight personnel comfortable. Officers were quartered in the Legation home of Mr. Boay Long, the American Minister. All enjoyed the trip, although they did admit that the flying had been rather strenuous.

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AIR CORPS DEMONSTRATION FOR MAJOR GENERAL BUTNER

On Sunday, Jan. 23d, planes and personnel from France and Albrook Fields passed in review to honor Major General H.W. Butner, Panama Canal Department Commander. General Butner sailed from Cristobal aboard the SS "Ancon", bound for New York on leave. Just after the "Ancon" left the dock and was steaming for the open sea, O-19's, P-12's, B-6's and B-10's passed by the ship in review several times. Air Corps personnel in Panama hope heartily that they will soon be able to welcome General Butner on his return with an even better demonstration.

TRANSPORT AND AMPHIBIAN PLANES FERRIED TO PANAMA

A ferry flight of three airplanes with Brig.General Geo.H. Brett in command, arrived in Panama on December 20, 1935. The personnel of the flight consisted of Brigadier General George H. Brett, Lt. Colonel R.H.Ballard, Major G.H.Beverly, Lieuts. R.S.Israel, W.H.Tunner, Staff Sergeants J.L.Malone, J.C.Whitman, Sergeant R.F.Smith and Corporals H.L.Fagley, C.Mitchell and E. Payeski. A Bellanca C-27 and two Douglas Amphibians were the airplanes ferried.

The flight personnel from Panama arrived in New York on December 1st and went directly to Mitchel Field, where the Bellanca and one Amphibian were picked up. They were flown to Bolling Field the same day. Here the remaining amphibian joined the flight.

After several days' delay due to inclement weather, the flight arrived at Randolph Field on December 7th, and by the 10th were fully prepared for the long trip to Panama.

A further delay was encountered before the necessary negotiations with the Mexican Government for permission to fly over its territory were completed. The flight finally entered Mexico on December 17th, landing at Minatitlan after flying a little over six hours. This was not a nonstop flight, for landings were made at Tampico and Vera Cruz. The only difficulty experienced during the flight occurred at Tampico. Here the Mexican authorities smilingly informed the members of the flight that they were not authorized to fly over Mexico. It was regrettable, but had not the flight been informed that a Mexican State Department flight permit was required? No, the flight had not been so informed. And, since the authorities were polite but firm, telegrams had to be sent to Mexico City requesting the necessary permission. Apparently the Mexican authorities in Matamoras, both civil and military, knew nothing about flight permits, because assurance had been given that all papers for the flight were in order.

The necessary permission was finally granted, and on the 18th the flight continued to Guatemala City, where an overnight stop was made. On the following day, San Jose, Costa Rica, was reached, via Managua, Nicaragua. At Managua the flight was met by General Samos, President-elect of Nicaragua, who invited the American airmen to luncheon while the ships were being inspected and serviced. In San Jose, the flight was entertained by Mr. Sack, the American Minister to Costa Rica.

BOLLING FIELD HAS FLOOD CONTROL PLANS

During the past three years Bolling Field has had two experiences with floods which were both costly to the government and inconvenient to the personnel. The first one, which occurred in the fall of 1933, was unexpected and necessitated vacating the old wooden barracks for the new brick building which had just been completed at the new field. The second flood came in March, 1936, but this time the post had been prepared and had transferred all movable equipment to dry ground. The experience from the first flood had put the post meteorological department on the lookout for weather conditions which bring on such floods, so that a warning could be given sufficiently in advance to allow the post to carry out the flood plans for protecting all movable property, including airplanes, flying equipment, and supplies stored in warehouses. Each department is to follow a definite procedure, so that all equipment may be moved in the least possible time.

To prevent any future floods, the U.S. Engineer Corps is constructing a sea-wall from the extreme north end of Bolling Field to the higher ground of the new field. The old flying field is ten feet above sea level and only a few feet above water level at high tide. The new sea-wall is ten feet higher, and is being made of dirt obtained from excavations on a nearby hill. The Naval Air Station has hangars built to the water's edge, for launching and hangaring seaplanes, so the sea-wall will be constructed to the hangars and water-tight doors will be installed to prevent flood waters from entering through the hangars.

With the completion of the sea-wall, coupled with sufficient warning in advance by the Weather Bureau, the danger of floods and the worries incident thereto will be eliminated.

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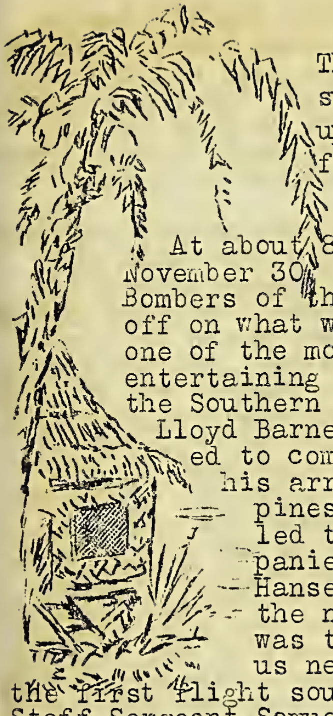
LANGLEY FIELD AIDS FLOOD SUFFERS

Personnel of the Langley Field Air Base have responded generously to the call of the Red Cross authorities for the relief of victims of the recent floods in the Middle West.

The Langley Field quota of $250.00 was quickly oversubscribed. In addition, almost a ton of clothing and bedding, consisting of shoes, coats, shirts, hats, overcoats, blankets and baby clothes were collected by the ladies of the Post for the local Red Cross Chapter, with the assistance of the local Boy Scout Troop. Twenty-one large packing cases were filled and shipped to the Bowling Green, Kentucky, Red Cross Flood Relief Distributing Point on February 1st.

A FLIGHT TO THE SOUTHERN ISLANDS



The narrative here given is from a report submitted by 1st Lieut. Frederick A. Pillet upon completion of his first inter-island flight after arrival in the Philippines.

At about 8:00 a.m., Monday, November 30, 1936, three B-3A Bombers of the 28th Squadron took off on what was to be probably one of the most interesting and entertaining flights ever made to the Southern Islands. Major Lloyd Barnett, who was appointed to command the 28th upon his arrival in the Philippines on October 30th, led the formation, accompanied by Lieut. George W. Hansen who leaves us on the next boat, and who was to see that none of us newcomers got lost on the first flight south. With them were Staff Sergeant Samuel Gershon, crew chief; Private, 1st Cl. Thomas W. Windham, assistant crew chief, and Private Myrvan R. Morley, radio operator.

Lieut. Colonel Thomas S. Voss, who assumed command of Nichols Field upon arrival on the July boat, but who missed the previous Southern Island flight due to the press of official duties, took number two position, accompanied by Lieut. Charles A. Clark, Jr., who had to rush down and back in two days on his last flight south. Sergeant Thomas R. Smith and Corporal Albert W. Carter held down the rear end of this plane. Lieut. Frederick A. Pillet, also a newcomer from the last boat, held number three position, with Major Robert K. Simpson, M.C., the custodian of health for the flight. Staff Sergeant Max A. Schrader and Private, 1st Class, Stanley J. Enberg looked after this plane, with Private Jacob C. Ziembo, radio operator.

With our jungle kits loaded with emergency rations, pistols, ammunition, iodine, mosquito nets, etc., under the usual Kapok cushions of our parachutes, and our life preserver vests properly adjusted, we were barely able to climb aboard, but finally made it, and with full tanks of gas and empty bomb bays we soared away.

Iloilo (Elowelo to those who don't understand the lingo over here) was the first stop after a four-hour flight around the edges of islands and over various and sundry intermediate fields which might come in useful some day when the weather is not as fine as it was on that particular day and was, in fact, throughout the entire flight. Here the little 183 Command Sets, which we were fortunate enough to have for each of our Bombers, proved useful. Just as Lieut. Pillet was about to follow Lieut. Hansen quickly into the field, a warning was broadcast that the runway just used was very rough and it was possible for the other two planes to use the other runway which was much better.

Most of the fields over here are satisfactory from the standpoint of getting in and out, but with many of them it is necessary to be very careful to use just one little narrow strip on the field. The rest of it may be rough or soft. After a short stop here for gas, out of those 5-gallon cans, and a little refreshment, we pushed on to Zamboanga, which we reached after a little more than a three-hour flight. We were making knots on that hop, better than ninety per, and for the benefit of those of you GHQ boys who have forgotten what a B-3A is like and are used to cruising around at one-hundred-eighty or so, ninety is plenty good for these old B-3's. Right here and now we want to spread around a few bouquets for the men in the Depot, the men on the line and all the crew on this particular flight, for in spite of the fact that these planes and engines are old - nearly ready for compulsory retirement for age, in fact, they keep them in fine condition. It has been a long time since the last forced landing (lots of good knocks on wood here), and we got through this entire flight without any mechanical difficulties whatever. And don't forget that for every five minutes' flying time the boys had to empty one of those five-gallon cans of gas into each one of the Bombers.

On the hop to Zamboanga we passed around a few nice heavy local thunderstorms. Col. Voss and Lieut. Pillet changed positions once or twice, and when Lieut. Hansen found it was the Colonel and not the Lieutenant he had purposely run through the edge of one of those storms - was his face red? Besides that, we went barging across one 90-mile stretch of water [illegible] and Lieut. Hansen had a tough time trying to convince the newcomers that it would be safer to land in the sea beside one of those 15-foot sharks we saw than to come down in a jungle. The jungle didn't look any too good, however, particularly those parts marked "Unexplored" on the maps, so most of us decided that a beach would be about the best place for an "unpremediated" landing.

At Zambo we put up at the Hotel De Gink of Pettit Barracks, right on the bay, and then assembled at the Over Seas Club for a session at their famous "Round Table." It seems they have a slogan: "Strangers taken in," which they proceeded to carry out with a vim in the case of the Colonel. After a chicken dinner at the one and only hotel, we started on a round of the knick-knack shops, and there began the buying spree which was not to end until we reached home. At first we were just looking. Then some one asked "How much?" You know the rest. We got black coral and silver bracelets, ear rings, pins, shirt studs, rings, etc. This was jewelry night. The heavier and larger articles were to follow.

Having covered the tremendous airline distance of some 550 miles in one day of some seven odd flying hours, we felt at liberty to ease up a bit and see the country, so the next day we departed at 9:00 a.m. for Jolo, the land of the Sultan of Sulu. This was a hop of only about ninety miles, with a scattered chain of small islands not too far to the east, so we spent a little more time sightseeing on the way. As we crossed the center of Jolo, we passed a couple of old volcanoes with beautiful crater lakes. Then we dropped to a low altitude and followed the beach around the island to our landing field. There seemed to be natives scattered along the entire coast line, and we found at least one who had the business of living pretty well whipped.

Throughout the Philippines they have built fish traps in the shallow coastal waters, consisting of arrow head-shaped bamboo fences. The throat of the head is open, so that fish swimming along the barbs find their way into the interior but are unable, apparently, to find their way out again. In some cases the point is opened and successively smaller traps placed ahead so that the concentration of fish becomes greater. At the head of one such trap in Jolo, a native had built his home over the water. We suppose he had simply to dip a net under the floor of his home and bring up the dinner.

Upon landing, we found the field immediately covered with one of the most picturesque crowds of natives in the Islands. These Moros go in for color, dresses (the men wear them), turbans, odd hats, rags, and some of the youngest-nothing at all. George Hansen's friends can imagine what a picnic he had, and some of the others who would be photographers didn't have such a bad time either. We tried to corral a youngster in the raw to get our pictures with him, only to find that while he had been crowding in to get a look at us, at first, he was gone like a scared rabbit as soon as he found out we wanted to look at him. With the aid of an interpreter, a few centavos, and much coaxing, we finally got the pictures, as well as others of some of the costumes, black teeth and red lips from the old beetle nut habit. Many of these Moros still chew the native beetle nut, which makes their lips red and their teeth jet black. It was noteworthy that in this entire crowd there was not a single woman. Apparently, these men know how to handle their women.

As they were at all our stops, the Constabulary officers were more than kind and courteous. They placed a guard on the planes and furnished a reconnaissance car to take us to town, where we found the market in full swing - and the women, not in full swing but there - working. In these markets you find practically everything of any importance to native life, but little that you would care to eat. We did risk a little milk from a coconut and a bottled soft drink, but the sad part here, as in many of the other small villages, was that the signs "Ice Cold" didn't mean much, and it was all fair to middling warm. Some of the fish were quite pretty - all shades of the rainbow with a predominant blue - but others were not so beautiful, and they all had that repelling aroma which comes to fish after so long a time in the sun. Enough of that. We drifted on to other things. More black coral; bracelets at ten centavos; more bracelets for five. Lieut. Pillet brought three. Later, more were offered to him, and what a shock he received after producing those already obtained in defense of a further purchase to be told- "But these - real black coral - those - just Japanese imitation." They did look pretty much like hard rubber, but anyway his little girl doesn't care or know the difference. We split up here, and when we next assembled, what a collection!

There were brass trays, silver rings, mats, rope, cord, native straw hats, a plaque of miniature Moro weapons for Major Barnett, and for Colonel Voss almost a complete collection of the real things. Look out for him the next time you run across him. He also had along an old Moro soldier who claimed to have eleven heads to his credit, and who was acting as the Colonel's man Friday,- keeping the crooks from gyping him. Unfortunately we couldn't take this old man along with us, but apparently the Colonel had learned his lesson well, for he drove mighty hard bargains from then on, even without the assistance of the old headhunter.

Just as we were about to leave we ran across the local "Datu," - religious and political head of the district. He was clean and neatly dressed in American style coat and pants, wore tennis shoes, and one of the kind of shirts generally accompanied by a detachable collar, but which in his case was not so accompanied, although it was buttoned up to and including the collar button. Wherever he went he was accompanied by a native with a shotgun. It seems that one of the more recent contenders for the title of "Sultan of Sulu" not long ago died very suddenly from unexplained causes, and the Datu, being the father-in-law of the Sultan of Sulu, probably needed all the protection he could get. After a very flowery conversation with the Colonel through an interpreter, during which he told us how happy he and his people were to have us there and how much they loved the United States, he offered to take us out to the Palace and introduce us to his daughter, the famous Princess Dayang Dayang, Sultana of Sulu. Much to our changrin, however, we found that the Sultana's husband was not in; she would therefore be unable to receive us, but would be glad to do so at some other time in the presence of her husband. So - we didn't meet the Sultana of Sulu.

Back in Zambo that evening, we drove out to the San Ramon Prison. The Superintendent was most accommodating and took us through practically the entire prison. It was orderly, neat and clean, but the boards the men have for beds did not seem very inviting, and the little straw brooms on each bunk were there, we found, for the purpose of shooing away the mosquitoes. There were no screens, and if the mosquitoes there are in the least degree as multitudinous as they are in the vicinity of Nichols Field, we can't imagine how the poor men can do anything but "shoo" all night long. The Prison Post Exchange was one of the most interesting places we visited on the entire flight. There we found all manner of very fine wood carving, walking sticks, book ends, beautiful hardwood serving trays, and many, many sizes and models of the little native boats with outriggers and colored sails. Some of us were already running low on cash, but others were still going strong, so here the party's collection took another jump upward with a little of nearly everything named.

It was supper time, and an inspection of the kitchen with its goulash of native greens and dried ripe fish nearly made us all sick, although we understand that it is considered quite good by many of the natives. In fact, one of the prisoners informed us that times had been kind of hard on the outside, so he just stole something and got inside. Others had not arrived so much of their own volition, however. One was in for manslaughter - he had merely killed his wife. Evidently in that country what one does to his own wife is not so serious, but in the case of another man's wife - well, that's different. As we departed we found out what to do with useless people. One old man was swatting flies and putting them in a bottle, while another watched him. It seems that the former was good for nothing else, while the latter was not even as good as the former - and they had to have something to do. Oh! we almost forgot. At San Ramon they have a "Jail" in the prison. We had our pictures taken in front of it. Guess it must be for the bad men.

Well, the story runs on and on, but it was lots of fun in the making - the doing, but not the writing - and we hope a little of the fun and interest will trickle through to our indulgent readers - if there be any. Most of us finally got into the hay after this eventful day, except the Colonel, who had to write a note to his Commanding Officer, due down on an excursion boat in a few days, and tell her what not to buy. He drifted down to the Over Seas Club for this purpose, and when he returned he brought "Bridget," our first real monkey which, contrary to the old story, did have a very long tail. We all had to get up to meet Bridget, who was a constant center of attraction for the rest of the flight, but finally quiet again prevailed, and the following morning found us "Up and at 'em," and ready for other Isles - after the Colonel had picked up a couple of Moro costumes to go with his weapons.

Another pair of fifty-mile water hops brought us to Cotabato, where we picked up more brass, weapons, and a turban. The Constabulary officers here gave each officer an old gun or pistol. Most of them were a type of shotgun made by the natives illegally and confiscated by the Constabulary. They consist essentially of a rough stock with a piece of water pipe arranged to slide on it so that when it is pulled back the primer of a shotgun shell inserted in the rear of the pipe strikes a firing pin. Imagine trying to jerk one of those things on a target as you fired it. One other type had a tiny hole in the rear for a fuze, like an old cannon. You couldn't jerk or pull that baby in firing it. One was an old piece made by the Colt Mfg. Co., Hartford, Conn., in 1863, and repaired with a 1901 Chinese penny. It was an old cap primer.

The next stop was just about fifty miles further on inland at Lake Buluan, an isolated Constabulary Post. We had to fly around for about ten minutes before landing while they drove the carabao off the field, but when we finally got down - what a reception! Lieut. Navarro, the local Commanding Officer, took us to his home at the edge of the flying field, placed refreshments upon the table for both officers and men, and then insisted that we stay for dinner. Chickens were caught, killed and fried, and in a short time he and his family had produced a dinner for fourteen, fit for a king. And he didn't know we were coming, either, until he heard the sound of our engines. After dinner he had cigarettes and cigars for us, and ended by giving each of the officers something - one a fine barong (type of bolo), another a set of bow and arrows, another a spear, etc. But Major Barnett drew the prize - an old barong without a sheath, with a split handle. It seems that it had been taken from a Moro who had gone hermantado (crazy), and killed three or four people. As he had the weapon raised over his head for another stroke, butt of the handle forward, one of the Constabulary soldiers fired right into it and then shot him. We were all very grateful to Lieut. Navarro for his exceedingly kind hospitality, but could do nothing for him except to refuse to accept payment for a battery we had brought him for his radio.

Upon leaving Buluan, the same comedy took place which attended our departure from each of the other fields but which had not been mentioned up to this point. All the native children gathered around as we warmed up the engines and had a big time trying to stand up behind the propeller blast. The few clothes of those who had any were blown about like a flag in a gale, and there was just one mass of naked arms, legs and bodies tumbling about behind each plane. They loved it, too, even following the planes around as they taxied into take-off position and running after them a little way.

We had been working Nichols Field with our SCR 187's, but on this particular day had not been able to contact them, so when contact was made just before we landed at Davao, about 5:30 p.m., Lieut. Hansen gave the word for the two other planes to land, via the 183, and remained up to finish the transmission of necessary messages. When he landed we learned that there was a nice little typhoon about 300 miles east of the San Bernardino Straits (some little distance north of Davao) headed north and west, and reported in this position at 6:00 a.m. that date. Next morning we learned further that the number six signal (indicating a typhoon of considerable intensity passing very close, and winds of gale force to be expected) was up in Manila, and then you should have heard some of the old timers gripe about how long they had been in the Philippines, never seen a good typhoon, and then had to be off in the Sunny Southern Islands while one hit right next to home.

At the local hotel in Davao we found a playmate for Bridget and left them together while we journeyed to an appropriate club to pass the evening. At Davao we accumulated more bows and arrows, knives, spears, shields, etc., and Major Barnett got away with Bridget's playmate. In fact, she was given to him.

We left Davao early the next morning, Thursday, in order to take full advantage of market day at Dansalan, on Lake Lanao. Upon arriving there we found the usual Constabulary guards and reconnaissance cars to take us hither and yon, and drove immediately to the market. It is located right on the shore of the lake and boasts of two or three sheds in which fabric materials are displayed, but in the main consists of row upon row of natives who bring what they have to sell, each Monday and Thursday morning, and lay it upon the ground or on small stands. Apparently they come from all over that part of the Island, either on foot or in their little boats which fill the bay by the market. At the entrance there was a carabao market with a number of young animals. We had hoped to watch their owners bargaining, but were disappointed, as we were always as much of a curiosity to the natives as they were to us, and they always quit their chatter and stared at us whenever we were around. For some strange reason, none of us got the urge to pick up any of these animals, so they with some young goats we saw later remained about the only souvenirs we left behind on this flight. Beyond the carabao market were rows of odds and ends, trinkets, flashlights, cheap mirrors, cheap underwear (probably the product of a foreign country), local jewelry, fine brass trays, etc. On down closer to the Lake were piles of native rice, and fish - all kinds of fish, as in Jolo, and, as in Jolo, they were plenty ripe. We couldn't stand it long down there with the mixture of that well known damp, sour, marsh odor, and that of the over-ripe fish, so we finished our buying as quickly as possible and left the market, but not before observing one more humorous incident.

Before coming to the Philippines we had heard much about the semi-nakedness of some tribes here, but up to this date none of us newcomers observed any of this except in the children. No doubt it does exist, but we have not run across any. In this particular locality it is the custom for many of the people to wear a costume consisting of a big piece of cloth like a large roller towel. They drape it about their bodies in various styles and seem to put forth considerable effort in holding it up, but usually succeed very well and keep themselves completely covered with it. One buxom young woman, however, had a little trouble on this particular morning, although it didn't seem to give her much concern. She had on a black sack-like cloth which she held up in front with one hand or the other very well until she got into an argument with one of the other natives. Then she seemed to develop a little Jewish instinct, and there were considerable periods of time during which no hands were available for the holding up process, and the cloth would fall to her waist where, for some reason it would always hang. In between the times of greatest intensity of the argument she would find time to pick it up again for a moment, but did so with the air of one accomplishing some little job which might well be done to kill time, but which should never be allowed to interfere with anything of real importance.

After the market we went up to see Professor Moncado's Colony on the top of a hill near Dansalan. Here we found a number of frame buildings and a great deal of concrete statuary. In the yard was a concrete boat, about 25 feet long, containing concrete mermaids and various and sundry animal groups. We couldn't get the idea of just exactly what it was all about, except that it seemed to be built with the purpose of symbolizing the theme that it is wrong to kill and eat animals. In one of the buildings we found a number of wire enclosed rooms, each containing a full family group in life size concrete, shown eating their native food, each in the manner of the country depicted. There were groups showing Eskimos, Americans, Spaniards, Indians, Filipinos, Chinese and Japanese, and in each case the food was well duplicated in concrete and realistically painted. On one wall was a tablet telling the life story of the famous prophet Moncado - how he had set out to find the best diet for men by living in nearly all countries of the world, spending months in each one, eating their native food, from the poi of Hawaii to the raw fish of the Eskimos, and of the results he obtained from each of these native foods. He found American food all right, said that Chinese food made him lazy; Mexican was too highly spiced for proper digestion, and so on; but finally ended by stating that apparently different nationalities possessed different types of stomachs and probably should eat different diets. He had also decided, however, that it is best not to eat meat or cooked food, so none of the people who live with him do so. They seem to live principally on fruit, but the few whom we saw seemed to be in good health and had very clear complexions.

Moncado is a Christian, but seems to be a religious and dietetic fanatic. We had heard that he had seventeen wives, but it developed that he was running some kind of orphan asylum which contained about that number of little girls. At least, this is what one of the girls told us. They were all dressed in American style and, like the entire establishment, were neat and clean. We were unable to learn where the money came from to keep the place up. When we asked, one of the girls informed us that Dr. Moncado had many ways of making money - he had many friends in America. It was just a curious place about which we could learn little. Typical of the general trend of thought about the place was a quotation from Mr. Moncado concerning a sort of political party of which he is the leader, the "Modernists," which quotation was prominently and proudly displayed upon one of the walls: "All Modernists are not members of other political parties, but all those not members of other political parties are Modernists, and all members of other political parties are Modernists." Now there is a profound bit of wisdom upon which to cogitate.

When we left Moncado's it was after noon. We found that the market had broken up, and some of the natives had walked the mile or two to Moncado's to further press their wares upon us. At the flying field, another couple of miles away, we found still more, and the only way we could escape them was to take the air.

From Dansalan we flew to Del Monte, where many of your pineapples are grown. Here we were back in real American atmosphere again, and it was a pleasure. We had good American food with fresh pineapples for desert, enjoyed meeting the American officials of the Company, and found the weather delightful. The altitude of the plantation is not high, just about 2,000 feet, but it seems to be sufficient to insure a delightful year round climate, and we found to our amazement a road lined on one side with palms and the other with firs, all in excellent condition. The temperature seems to range from 65 to 80 degrees. There was nothing for sale, either, except the food and lodging, and that fact added to the comfort of the place.

The same afternoon brought us to Cebu, about whose virgins you have no doubt heard in that well known song which states - "She was born just yesterday." In Cebu we went through an old Spanish fort, now used as an industrial school, saw the original wooden cross which Magellan erected there in 1531, accumulated a couple of banjos, another monkey, for Lieut. Pillet, and prepared to shoot for home.

Saturday we blazed that old home trail, flew up to 8,000 feet, and shuddered a while to get a glimpse through the clouds of the smoking top of the Mayon volcano, and radioed for a couple of trucks and a photographer to meet us. Each of us was glad to get home again, but we were convinced that we had never spent a more interesting or worthwhile week.

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Five enlisted men of the Medical Department, stationed at various Air Corps Fields, were recently ordered to the School of Aviation Medicine, Randolph Field, Texas, for the purpose of pursuing a course of instruction for enlisted specialists.

These enlisted men, all of the grade of Private, are: Robert M. Denton, from Barksdale Field, La.; Henry G. Lewis, Maxwell Field, Ala.; Harry L. Mitchell, Langley Field, Va.; Robert W. Page, Selfridge Field, Mich., and John W. White, Mitchel Field, N.Y.

STATE HIGHWAY NAMED FOR DECEASED AIRMAN

As a result of a letter written by Colonel Henry W. Harms, Commandant of the Air Corps Primary Flying School, Randolph Field, Texas, to the Texas Highway Department, the new road connecting Randolph Field with State Highway No. 2, between San Antonio and Austin, has been designated the "Pat Booker Road," honoring the memory of Captain Booker, who died as the result of an airplane crash at Maxwell Field, Ala., September 16, 1936. The minutes of the State Highway Commission are as follows:

"Whereas, a State Highway has been constructed in Bexar County from State Highway No. 2, U.S. No. 81, to the entrance to Randolph Field, and,

Whereas, Pat Booker, a close friend and flying companion of W.M. Randolph, for whom Randolph Field was named, crashed and has gone to join his friend in that sacred place reserved for intrepid flyers,

Therefore, in memory of Pat Booker, it is ordered that the State Highway from State Highway No. 2 to Randolph Field be designated as "Pat Booker Road" and that it be so marked.

It is also ordered that a copy of this minute be sent to Colonel Henry W. Harms, Commanding Officer of Randolph Field; Honorable Frost Woodhull, County Judge of Bexar County, and Honorable C.K. Quin, Mayor of the City of San Antonio, with the request that they advise the nearest relatives of Pat Booker of this action."

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WE ACCEPT THE AMENDMENT

In the previous issue of the News Letter, quoting an item from one of our correspondents, it was stated that when the Wright Brothers flew their first airplane, over 33 years ago, it had a tricycle landing gear. This statement was preliminary to some information concerning the testing at Langley Field of an OA4-A airplane equipped with a tricycle landing gear.

The Aviation Editor of the Dayton Daily News calls attention to the fact that the first Wright planes had no wheel landing gear whatever, depending entirely on skis, and when the wheel type gear was added later (about 1909-1910) it was not the tricycle type. He adds that Glenn Curtiss was the first man in this country to use the tricycle landing gear and, as far as he knows, the first in the world. The tricycle gear, he claims, was a distinctive Curtiss contribution.

Reference to photographs of the early Wright and Curtiss airplanes clearly substantiate the contention of the Aviation Editor of the Dayton Daily News.

GRADUATION OF PRIMARY SCHOOL STUDENTS

The present class of students at the Air Corps Primary Flying School, Randolph Field, Texas, expects to complete the course of training thereat on February 19th. This class is the first to train on the new basic type equipment, and contains ten officers of the Regular Army, fifty-six Flying Cadets, and two foreign students, one of whom is an officer from the Mexican Navy and one a Flying Cadet from the Philippine Islands.

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DUTY ASSIGNMENT OF ARRIVALS IN HAWAII

Among arrivals in Hawaii on the U.S. Army Transport CHATEAU THIERRY on January 15th were seven Air Corps who were assigned to duty at Luke Field with the following organizations: 1st Lieuts. Lawrence H. Douthit with the 65th Service Squadron; Donald W. Titus, Hawaiian Air Depot; Donald R. Lyon, Headquarters 5th Composite Group; Leland S. Stranathan, 50th Observation Squadron; 2nd Lieuts. Robert M. Stillman, 72nd Bombardment Squadron; Maurice M. Simons and Louis W. Proper, 23rd Bombardment Squadron.

When the above named transport sailed on January 19th for the mainland, she took the following-named officers from Luke Field, who go to duty at the stations named: 1st Lieuts. William G. Bowyer and Charles H. Pottenger to Randolph Field; John G. Fowler to Bolling Field; William L. Travis and Milton F. Sommerfelt to Mitchel Field.

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FIELD EXERCISES IN THE PHILIPPINES

The Philippine Department Field Exercises were held during January, and the Third Pursuit Squadron, Clark Field, P.I., was based at Del Carmen, the excellent field of a sugar central located in southwestern Luzon. New airplane and ground radio equipment had just been received and, thanks to the Communications Officer, the maneuvers were far more interesting than any experienced in the few years since the old radio sets of the Squadron "went native" from the excessive heat and humidity.

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The number of visiting airplanes at Scott Field, Belleville, Ill., during the calendar year January 1 to December 31, 1936, was 1685. This figure is somewhat under the total of 2448 visiting planes for the calendar year 1935.

The difference is not due to any curtailed flying activities but rather to a considerable amount of regional unfavorable flying conditions.

GRADUATION OF ADVANCED FLYING SCHOOL STUDENTS

The class of students undergoing training at the Advanced Flying School, Kelly Field, Texas, and which is scheduled to graduate on February 17th, numbers 33, including three officers from other branches of the military service and 30 Flying Cadets.

War Department orders previously issued assigned the three student officers, upon their graduation, to duty with the Air Corps, viz: Captain James R. Andersen, Ordnance Department, and 2nd Lieut. Jack W. Hickman, Corps of Engineers, to the Hawaiian Department, and 2nd Lieut. J. Kimball Brown, Jr., Field Artillery, to Brooks Field, San Antonio, Texas. All three of these officers are graduates of the United States Military Academy, Captain Brown graduating in 1926 and Lieuts. Hickman and Brown in 1935. They specialized in Observation Aviation.

The remaining students, upon graduation, will be assigned to Air Corps tactical units for active duty, and are listed below, as follows:

Bleyer, Julian M. (Bombardment)	Tulsa, Okla.
Box, Clyde (Attack)	Denton, Texas
Brogger, Jacob J. (Pursuit)	Butterfield, Minn.
Cochran, Philip G. (B)	Erie, Pa.
Dalton, Lloyd H. Jr. (B)	Ottawa, Kans.
Dillingham, Walter H. (P)	Honolulu, Hawaii
DuBose, James R., Jr. (A)	Aiken, S.C.
Eubank, William E., Jr. (A)	Bluefield, W. Va.
Harvey, Sterling G. (Obs.)	Bloomsburg, Pa.
Helton, Elbert (A)	Clifton, Texas
Hillery, Edward G. (B)	Boonton, N.J.
Hoffeditz, Aaron H. (O)	Greencastle, Pa.
Hunker, Joseph F. (P)	San Diego, Calif.
McNown, William K. (B)	Lawrence, Kans.
MacDonald, Donald W. (B)	San Francisco, Calif.
Margrave, Thomas E. (B)	Gordon, Nebr.
Myers, Thornton K. (B)	Lafayette, Ind.
Nau, Wallace E. (A)	Pasadena, Calif.
Patterson, Steele R. (P)	Seneca, S.C.
Perry, Norris (B)	Sedro-Woolley, Wash.
Phelps, James W. (B)	Berwyn, Pa.
Schoch, Jack L. (B)	New Ulm, Minn.
Snavely, Eugene H. (B)	Harlingen, Texas
Tate, David A. (B)	Asheville, N.C.
Theobald, Robert A. (B)	Portland, Ore.
Thorne, Henry G., Jr. (P)	Fort McPherson, Ga.
Triffy, Sam P. (B)	Detroit, Mich.
Watson, Harold E. (B)	West Hartford, Conn.
Young, Earl B. (B)	Sidney, Nebr.
Zemke, Hubert (P)	Missoula, Mont.

When this class started flying training in March, 1936, at the Primary Flying School at Randolph Field, Texas, with but 65 students, it proved to be the smallest one entering that school for quite a number of years. With 33, or 51 percent of the original number of atudents entering the class, successfully completing the one-year intensive course of flying instruction, it appears that an excellent record was achieved, since the normal average of students "making the grade" is about 45%.

The States of California and Texas, each with three students, had the largest representation of native sons in the graduating class. Four of the graduates, Flying Cadets Nau, Thorne, Margrave and Hoffeditz, were Air Corps enlisted men prior to appointment as Flying Cadets.

REVOLUTIONARY CHANGES WROUGHT BY AVIATION

In an address delivered recently by Colonel Charles A. Lindbergh at a luncheon in his honor by the German Air Ministry, he stated, in substance, as follows:

I sometimes feel those of us who grew up in aviation have lived much more than an average lifetime. It seems almost as though we have the opportunity of living in the future and looking back on our lives, of judging our work through another generation's eyes.

Certainly the whole world has never changed faster than at the present time, and during this change nothing has developed more rapidly than aviation. If the man who sailed the first dugout canoe could live again he would hardly see more change in ships than our own generation has seen in aircraft. Except for the fact that he had not lived through the intermediate centuries of development, the modern battleship would give him no more cause to ponder than the modern bomber should give us. He could no more have seen a 16-inch gun attached to his canoe than we were able to see five or ten thousand pounds of bombs attached to our planes of twenty-five years ago.

Scientists now talk of time in terms of Astronomy, Physiology, and Psychology. Our concepts of time are changing, and I think it is nowhere more noticeable than in aviation. Our ideas of time and distance are entirely different from those our fathers held.

Unlike the builder of the dugout canoe, we have lived to see our harmless wings of fabric turn into carriers of destruction even more dangerous than battleships and guns. We have lived to carry on our shoulders the responsibility for the results of our experiments, which in other fields have been passed to future generations.

We who are in aviation carry a heavy responsibility on our shoulders, for while we have been drawing the world closer together in peace we have stripped the armor of every nation in war. It is no longer possible to shield the heart of a country with its army. Armies can no more stop an air attack than a suit of mail can stop a rifle bullet.

Aviation has, I believe, created the most fundamental change ever made in war. It has abolished what we call the sense of warfare. It has turned defense into attack. We can no longer protect our families with an army. Our libraries, our museums - every institution which we value most, is laid bare to bombardment.

Aviation has brought a revolutionary change to a world already staggering from changes. It is our responsibility to make sure that doing so we do not destroy the very things we wish to protect.

We have moved so fast we have imposed aeronautical time upon military tactics, and we have taken away the old defense of astronomical time, which has probably been civilization's greatest safeguard in the past.

As I travel in Europe I am more than ever impressed with the seriousness of the situation which confronts us. When I see that within a day or two damage can be done which no time can

(Continued on page 16).

BIOGRAPHIES

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LIEUT. COLONEL GEORGE E. LOVELL, JR.

Lieut. Colonel George E. Lovell, Jr., Air Corps, now on duty as Executive Officer, Barksdale Field, Shreveport, La., was born at Buffalo, New York, August 10, 1889. Graduating from the U.S. Military Academy, June 12, 1913, he was commissioned a second lieutenant and assigned to the 9th Cavalry, with station at Douglas, Arizona, where he served from September 12, 1913, to October 15, 1914. He was stationed at Naco, Arizona, on border duty to January 10, 1915, and at Douglas, Arizona, and vicinity to April 20, 1916.

Attached to the Aviation Section, Signal Corps, he attended the Aviation School at San Diego, Calif., and upon the completion of his flying training he was rated a Junior Military Aviator, effective November 19, 1916. He was promoted to 1st Lieutenant, Cavalry, July 1, 1916.

Colonel Lovell joined the 1st Aero Squadron on December 15, 1916, and was stationed at Colonia Dublan with a detachment of that Squadron to January 28, 1917. He was then stationed at Columbus, New Mexico, to March 31, 1917. Following duty with the 3rd Aero Squadron at Kelly Field, Texas, to October 28, 1917, he assumed command of Taliaferro Field, Texas, and served in this capacity to March 5, 1918. He was on duty as Executive Officer at this field to July 25, 1918; commanded the School of Aerial Gunnery thereat to August 8th; resumed command of that post until September 5, 1918, when he was ordered to duty overseas.

While on duty with the A.E.F. in France, Colonel Lovell was Executive Officer of the 2nd Aviation Instruction Center, October 10, 1918, to February 10, 1919. Thereafter and until he was relieved from duty with the A.E.F., April 25, 1919, he was on duty as Chief of Staff to the Army Air Service Commander, 1st Army. Upon his return to the United States, he served as Officer in Charge of Administration, Rockwell Field, Calif., to July 28, 1919, when he assumed command of Park Field, Millington, Tenn., to April 19, 1920.

Transferred to Camp Benning, Ga., Col. Lovell served as commanding officer of Air Service activities thereat to August 15, 1921, when he was transferred to McCook Field, Dayton, Ohio, for duty as student at the Air Service Engineering School. Upon his graduation in August, 1922, he was assigned to the command of the 99th Aero Squadron at Bolling Field, D.C., and as Executive Officer of this post. In July, 1923, he was transferred to duty in the Hawaiian Department, where he served as Commanding Officer of the 5th Composite Group and of Luke Field, T.H., to April 6, 1924; as Executive Officer, 4th Observation Squadron, Wheeler Field, TH, to July 29, 1924; as Commanding Officer of the Hawaiian Air Depot to January, 1926, and as Commanding Officer of the 5th Composite Group and Luke Field, to May 26, 1926.

Returning to Bolling Field, D.C., Col. Lovell performed various duties at this stations, such as post commander, engineering officer, and commanding officer of the 56th Service Squadron, also Executive Officer and Operations Officer, until June, 1927, when he was detailed as Assistant Military Attache for Aviation, American Embassy, Rome, Italy.

Upon the completion of his four-year tour of duty on this assignment, he was transferred to Langley Field, Va., and in September, 1931, he was assigned to duty as student at the Air Corps Tactical School at Maxwell Field, Ala. Upon his graduation from this school in June, 1932, he was assigned to his present station at Barksdale Field, La.

Colonel Lovell was promoted to Captain, Cavalry, May 15, 1917; to Major, July 1, 1920, and to Lieut. Colonel, August 1, 1935.

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LIEUT. COLONEL CARLYLE H. WASH, A.C.

Lieut. Colonel Carlyle H. Wash, Air Corps, now on duty as Commanding Officer of the 17th Attack Group at March Field, Riverside, Calif., was born at Minneapolis, Minn., October 15, 1889.

After attending the University of Minnesota for one year, he received appointment as a cadet at the United States Military Academy, from which he graduated June 12, 1913, whereupon he was appointed a second lieutenant and assigned to the 6th U.S. Cavalry. Following service at Texas City, Texas, September 13 to October 6, 1913, during which period he was attached to the 22nd Infantry, he served with the 6th Cavalry at Texas City, Harlingen and Mission, Texas, to April 28, 1916. He participated in action against Mexican bandits at McAllen's Ranch and Ojo de Agua, Texas, in October, 1915.

From May 20, 1916, after nearly a month of duty with the Punitive Expedition into Mexico, to August 16, 1917, Colonel Wash was on border patrol duty in Big Bend District, Texas. He was District Ordnance Officer of the Big Bend District from February 11, 1919.

Attached to the Aviation Section, Signal

Corps, August 2, 1917, he was a student undergoing flying training training at the Aviation School at San Diego, Calif., to December 13, 1917, when he was rated a Junior Military Aviator. He remained at San Diego (Rockwell Field) as an instructor in flying, aerodynamics and gunnery, to February 1, 1918. Transferred to Call Field, Wichita Falls, Texas, he was in charge of flying and commanding the Air Service Flying School thereat from February 6 to April 16, 1918. He was next assigned to Souther Field, Americus, Ga., and organized and commanded the Air Service Flying School there. During his regime at Souther Field, students flew about 20,000 hours, and 275 students were graduated between June 1, 1918, and the signing of the Armistice without a single fatality being recorded.

Upon the closing of Souther Field, Col. Wash was assigned, January 19, 1919, to the Air Service Engineering Division at McCook Field, Dayton, Ohio, as supply officer, in which position he had charge of several million dollars worth of Air Service property.

Relieved from duty with the Air Service in October, 1919, he served with the 15th Cavalry at Fort D.A. Russell, Wyoming, until March, 1920, when he was redetailed to the Air Service and assigned to duty at McCook Field, Dayton, Ohio, as Chief of the Flying Section, Engineering Division. In November, 1920, he was assigned as student officer at the Air Service Engineering School at McCook Field, and shortly following his graduation therefrom he was assigned to duty in Washington, D.C., in the Office of the Chief of the Militia Bureau.

On July 25, 1922, he began his duties as Assistant Military Attache at the American Embassy, Paris, France. During the period June 11 to July 14, 1924, he was on duty as Advance Officer for the 5th Division of the Air Service Around-the-World Flight.

Returning to the United States in April, 1925, Colonel Wash was assigned to duty as Executive Officer of the 10th School Group at Kelly Field, Texas. On October 2, 1926, he was designated as Officer in Charge of Training of the Advanced Flying School, Kelly Field, and he continued on this assignment until March 14, 1927, when he assumed command of March Field, Riverside, Calif. On August 10, 1927, he was assigned as Director of Training of the Air Service Primary Flying School, which was established in that year at March Field. At various times he also temporarily commanded the post.

In April, 1928, Col. Wash was transferred to duty in the Panama Canal Department, where at first he was in command of France Field and the 6th Composite Group, and later Executive Officer thereof.

Transferred to duty in the Hawaiian Department in February 1929, he assumed command of the 18th Pursuit Group at Wheeler Field, T.H. In July, 1931, he was detailed as Air Officer, Hawaiian Department, in addition to his other duties, and performed this additional duty until November 26, 1930.

Relieved from assignment with the 18th Pursuit Group, May 16, 1931, Colonel Wash was assigned as student at the Air Corps Tactical School at Maxwell Field, Ala., and, following his graduation, June 11, 1932, was assigned to Mitchel Field, N.Y., as Executive Officer of the 9th Observation Group, and of the post. At various times he assumed temporary command of the post.

Detailed as student at the Command and General Staff School, Fort Leavenworth, Kansas, for the 1934-36 class, Colonel Wash, upon his graduation from the two-year course at this school, was assigned to his present station, March Field.

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Scott Field in Flood Relief Work
(Continued from Page 1)

W8CJH handled a total of 640 messages. These messages included the following types: 163 personal, 38 Red Cross, 28 U.S. Army, 24 National Guard, 10 Police, 3 Coast Guard, 4 American Legion, 1 Salvation Army, 4 W.P.A., 3 Federal Surplus Corporation, 1 Boy Scouts of America, 5 airplane, 18 information and weather, and 19 commercial radio.

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A Marine Corps flight, commanded by Colonel Roy S. Geiger, and composed of four Squadrons (51 airplanes, 56 officers and 74 enlisted men), stopped overnight at Randolph Field, Texas, on January 25th. The flight was from Quantico, Va., and enroute to San Diego, Calif., for maneuvers.

The Third Pursuit Squadron, stationed at Clark Field, Pampanga, P.I., recently completed another cross-country flight to the Southern Islands of Leyte, Cebu, Bohol, Mindanao, Jolo, Masbate, Negros, Mindoro and Panay. Approximately twenty-five landing fields were visited during the five-day trip, and all were found to be in a generally good condition. The Squadron's P-12 airplanes of B, C, D and E vintage were used on the trip and, as usual, performed well. All pilots wore the new "Jungle Kits" sewed to their parachute pack. Fortunately, they did not have occasion to test them under actual conditions.

A class is being sponsored at Scott Field, Ill., by Chaplain James C. Bean, which offers the opportunity to all members of the command to study and prepare themselves for the various Air Mechanics examinations.

LICENSES FOR BOLLING FIELD RADIO OPERATORS

. Pending the completion of the new control tower, all the radio operators in the Communications Department at Bolling Field are preparing themselves for their new jobs. They will be required to handle communications from the tower and control landings and take-offs. Since the system of operation will be similar to that used by commercial control towers, each individual is anxious to achieve the utmost efficiency in his duties. To bring their standing on a par with commercial towers, all the operators are getting a Class 3 commercial license in radio-telephony. On Thursdays, the Federal Communications Commission in Washington gives an examination for licenses, so each week two or three operators have taken it and received their diplomas. Five operators now have their Class 3 Commercial, and the rest hope to have theirs before tower control is started.

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NEAR CHANGE OF STATION PROVES COSTLY

Our Richmond correspondent reports that Colonel Jack Beam and wife recently took a hurried and unexpected trip to Richmond, Va. It seems that Jack had first gotten a short pass for his wife from the Hospital and then went down to the railroad station to greet some friends passing through. The greetings and farewells were prolonged by a few seconds beyond the allotted time, and the first indication Jack had that things were not just as they should be was when the train entered the tunnel and sudden darkness indicated that it was too late to jump. Besides, Jack didn't have his parachute. In spite of all his pleadings, remonstrances, etc., he could not prevail upon the Skipper of the train to make a landing short of the first scheduled stop - Richmond. At almost three A.M. Jack again reached Washington a sadder, wiser and poorer man, to the viz: 14 bucks.

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STUDENT MAINTEMANCE NAVIGATION FLIGHT

This final student cross-country flight departed from Kelly Field on February 3d, after having been delayed one day due to inclement weather. The flight commander was Colonel E.A. Lohman, Assistant Commandant of The Air Corps Advanced Flying School. The flight consisted of 14 instructors, 3 student officers, 29 flying cadets, and 15 enlisted mechanics; in 9 P-12D's, 9 A-12's, 8 O-25's, 10 B-4's and B-6's and 3 BT-2BI airplanes.

Stopping over night at Barksdale Field, February 3d, the students were afforded an opportunity of inspecting a GHQ Air Force station.

On February 4th, the flight proceeded to Maxwell Field, and the last report showed them at Athens, Georgia, where they were spending the night and visiting the University of Georgia. Upon departure from Athens the flight is scheduled to visit the Georgia School of Technology at Atlanta, Georgia; the University of Alabama at Auburn, Alabama, and the Louisiana State University at Baton Rouge, Louisiana.

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Revolutionary Changes Wrought by Aviation

(Continued from Page).

ever replace, I begin to realize we must look for a new type of security - security which is dynamic, not static, security which rests in intelligence, not in forts.

And in the fact that intelligence must be combined with aviation I find some cause for hope. It requires more intellect to operate an airplane than to dig a trench or shoot a rifle. The education which is necessary in aviation must also teach the value of civilized institutions.

Our responsibility in creating a great force for destruction may be somewhat relieved by knowing we have allied this force with intelligence and education and that we have moved power further away from ignorance. I find some cause for hope in the belief that power which must be found to knowledge is less dangerous to civilization than that which is barbaric.

It is aviation's responsibility to justify the combination of strength and intelligence.

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A.C.OFFICERS ASSIGNED TO INDUSTRIAL WAR COLLEGE

Special Orders of the War Department recently issued assigns the following-named Air Corps officers for duty as students at the Army Industrial College, Washington, D.C., for the 1937-1938 course, viz:

Majors Shiras A. Blair, John A. Laird, Jr. (Captain), Malcolm S. Lawton (Captain), Robert T. Zane (Captain), now students at the Air Corps Tactical School, Maxwell Field, Ala.

Major Edward M. Powers (Captain), Wright Field, Ohio.

Captain Julian B. Haddon, Air Corps Tactical School, Maxwell Field, Ala.

Captain Harry H. Mills, Instructor, Michigan National Guard, Detroit, Mich.

Major Clarence P. Kane (Captain), Hawaiian Department.

Major Don L. Hutchins (Captain), Hawaiian Department.

The above-named officers are relieved from assignments and stations indicated and from whatever duty they may be performing, effective at such time as will enable them to report between August 16 and 21, to the Director of the Army Industrial College for duty.

ANOTHER GOLD HUNT BY AIR CORPS SOLDIERS

Below is an extract from a recent letter written by William T. Bennett of the 25th Bombardment Squadron, France Field, Canal Zone.

Readers of the Air Corps News Letter may recall an abbreviated diary written by this same soldier, and which was published in a recent issue of the News Letter.

This extract is a report upon another expedition made by soldiers into the jungle fortress that protects the gold deposits of Panama and, although it does not reveal astonishing discoveries of tremendous gold wealth, it is a report upon the wealth of experience that is open to the Air Corps soldier in Panama, if he has the energy, the imagination, and the spirit of adventure required to take advantage of it.

"We left France Field on the morning of December 2, 1936 for Albrook Field. Here we were met by a truck which took our equipment and supplies to Madden Dam, where we were met by four natives with two large cayucas.

They finally loaded everything, including the three of us, and away we started. At this time of the year, the Chagres River is quite a lake, and we were able to paddle for the entire first day. As interesting as riding a cayuca into vergin jungle on a perfectly clear day can be, it is extremely tiresome. After a while the shores all look alike and all one can think about is shade.

We spent a night under the stars, and would have slept all night had we not been lying so close to an ant nest.

By daylight the next morning, we were under way and soon thereafter the river narrowed, as we had reached the foothills and were starting up. The natives had to relinquish their paddles in favor of poles and we had to wade at least half of the time. The rapids were swift, rocky and hard to navigate, and walking was difficult, as the footing was slippery and over large and small boulders. We finally made it, and late that night we reached Candelaria where we intended to make a more or less permanent camp.

After we had everything shipshape, beds built, stove made and our food stowed away so as to be protected from ants and rain, we started looking for game, for we had developed a tremendous appetite. This was soon found, as all kinds of game are plentiful in the jungles and the rivers are full of fish. The first day I saw and killed some turkeys, and saw signs of deer, pigs, nikki, canau, tiger, coon and other animals I couldn't identify. I think the wild turkeys are the best I ever had. They have no wild taste, and are as fat as can be. We will have plenty to eat at any rate, as we have plenty of ammunition and salt.

Senor y Senora Campbell, a Jamaican couple working for the Canal, are stationed at Candelaria to record the rise and fall of the river and to report the rainfall. They gave us some cassava root. We fried it and found that it tasted like fried potatoes only better. This root was plentiful; so now we had potatoes also. They told us of a native who lives further up the Pequini. More about him later.

While making a recent aerial reconnaissance of the entire Pequini valley, I had noted several old Spanish gold workings, so I decided to look them up. One was up the Candelaria, so I took that first. There are two forks to the Candelaria, and on both of them and the stream proper I found these workings. Most of them were of the boom type. They ditched the mountain side, lined the last hundred or so feet of the ditch with large stones, let the rain do the rest during the rainy season, and then cleaned up the riffles in the dry season. I would like to have just what washed away from their riffles in this country during one wet season. I followed all branches to their sources, and while finding gold in the gravel there were no outcroppings of the vein I was still looking for. Not being an expert on placer mining or any other method, I believe- though I am not sure - the entire vein of alluvial gravel on both sides of this stream would pay well to work. My estimate is that the gravel will pay from fifty cents to four dollars and fifty cents per yard on the entire stream.

Next on the program was to try our improvised pipe trap arrangement to determine if our pool of gold was in reality a pool lined with gold, or just sand. We had a four-inch pipe with a trap in the bottom and, after carrying the eighty pound "Rube Goldberg" nearly all of one day, we finally reached the pool. However, the swirling action of the water prevented us from being successful as we were unable to sink it to bed rock and all we got was gravel. We didn't even reach the sand I know is there, as I have seen part of it and also some of the gold I hope to get out of there some day soon.

We discovered more Spanish and several more recent gold workings on both the Paluca and the Mauro Rivers. We had crossed to the Boqueron side of the mountains, and while there decided to explore both of these rivers a bit more thoroughly. I didn't find any more of the float or any indication where it had come from on the Mauro; but I will some day, maybe. I shot at and missed a small cat of the tiger variety.

We returned to camp on the Pequini and decided to try the San Antonio, if we could find it. Commandering a cayuca, we set out up stream. This sounds easy, but try it some day! You use a long pole to propel the cayuca when you are in it and the natives seem to have no trouble, but with me - well, I fell out of the cayuca, fell down in it, and was so angry that I nearly gave up. And that is the easy part. When you have to get out and wade knee or waist deep and push your own cayuca, that is tough. We pushed on, and about noon came to the home of the native whom Senor Campbell had mentioned several days before. He was living in a small open thatched hut on the side of a small stream which empties into the Pequini. He pronounced this river the "San Antonio" but, according to the map I have of the old mine the two Americans had to leave, it is on the wrong side of the Pequini. However, Senor Arvagan, as his name proved to be, said he would show us some nice gravel. He was working a vein of the same alluvial gravel we had found in the entire country and his was about the richest yet. He also showed me a small bottle of mighty pretty gold he had washed out with his batea (wooden gold pan to you). With even a small sluice box he could make good money here, but that is too much work. All he needs is a small amount of money, as he has fruit, vegetables, game and fish at his door for the taking - so why work? This attitude of the few natives I have seen in the jungles is what scares me. May I never get like that!

Senor Arvagan directed us to the San Miguel, as we wanted to visit this river also, and we left him with his flea-bitten dog on the bank of his San Antonio. I wondered what he would think if I were to return with a hydraulic ram and work where he could see so much gravel moved in a day! We finally reached what we took to be the San Miguel and, after finding a small falls, we were sure of it.

A little above the falls we found recent gold workings, and soon were finding traces of the gold workings of the Spaniards. The same pay streak is here and about the same conditions. Everywhere it runs from a few inches to over ten feet of gravel and nearly all contains gold - some richer than others - but enough to warrant being worked mechanically. There are at least two branches to the San Miguel. We were unable to explore them, however, as we had a lot to do and wanted to get back to Candelaria before the week was up. We decided to let them go and to travel a bit further up the Pequini, as no one is ever supposed to have worked beyond there. Going farther is difficult, and I don't wonder no one has been beyond there except a Canal worker charting the river. The first rapids we came to were a series of steps each about a foot high and numbering about thirty in all. It would have been necessary to unload the cayuca and carry everything over, including the cayuca, as the water was very swift and shallow. We decided to return to Candelaria, so we turned back just below the falls.

A short distance down stream we came upon a very small creek and decided to follow it up a bit. Very soon it widened out and became quite a river. Maybe this was the "San Antonio" we were looking for. I decided to go on to the first rapids, and the others returned to the cayuca. A few hours later I returned to find White killing a large Bushmaster which had just attacked him. He killed a partridge, and when he started up a small bank after it the Bushmaster struck at him. White was carrying a bolo in his hand and when he saw the movement he automatically hit at it and, luckily for him, he hit it. Turner said its fangs missed his chest about one inch. The snake was about seven feet long, had fangs over one inch long and poison sacks larger than my thumb. It could have killed a dozen men. Incidentally, Mr. Bushmaster is the most deadly snake in the tropical jungles, and one of the prettiest.

We decided to move on from there, as Bushmasters always travel in pairs and we didn't want to see an angry wife even if we had just killed her consort. Before we got to Candelaria, however, we stopped and explored several small que brazos and canals. Ten years wouldn't be long enough to accomplish all that one would like to in this locality.

After returning to camp, we decided to take a rest and go fishing. We killed a couple of birds for bait and set out down the river. Caught some large Boca Chica (small mouth) and several channel catfish. After a pleasant day, we started for camp and, after crossing the river, discovered we had forgotten a bolo. I returned for it and nearly stepped on a seven-foot tree viper or Palm Adder. Being armed with only a pistol, I hurriedly retreated but couldn't go far. The adder reared up on its tail, so I took shot and missed. It advanced and I shot again, and this time I hit it, but not enough. It retreated into a tree and I went on after the bolo and then came back and killed it. Sure was mean looking. To top that off, we made our way cautiously over the trail and White and I both stepped over a log and went on. Turner stepped on the log and and there on the shady side was a coiled Bushmaster about four feet long. As we returned to kill it, he looked us over and still didn't move. I killed him with a bolo, and we returned to camp without further incident.

We began checking up, and discovered we had spent a very quiet Xmas without even knowing it, as we had lost all track of time. On our improvised calendar we began checking days off by events and found we were nearly due to leave and Xmas was over. I decided to make one more trip of two days, and started immediately. I found nothing new, just the same gravel, all containing gold in about the same quantities. I killed a small coral snake and one twenty-minute snake, so called because you never live over twenty minutes after being struck by one. It is a pretty little brown snake about one to two feet long. Also saw a large cat of the tiger family but was too far from camp to shoot it, as I didn't care about carrying the hide so far. After I returned to camp, we began preparing to leave and the next morning our natives showed up. We packed everything and left Candelaris early the next morning.

There were three of us, two natives and all our kit and the natives' bundles and food in a small eighteen-foot cayuca. We were loaded to the gunwales, and the cayuca was wabbly, so we put side boards on by cutting down a very light tree and putting half on each side. This was a big improvement and we sat better. After about an hour, our chief boatman saw a snake on the bank and before we knew it he went to shore after it. The snake saw us and instead of retreating it came after us and, while trying to get out of the way, I fell overboard and Turner fell on top of me. By the time we got back in the boat, the natives had killed it - a "Whip Snake", so they said. It was about eight feet long, black, and had a long slender tail with saw teeth. The natives said that while it was not poisonous, it would slash you with the tail, and that was very bad, as the cuts would fester and kill you within two or three days.

After an uneventful trip, except for the Whip Snake, we reached Madden Lake and put up a sail. For the small cayuca we had, the sail looked rather large to me, but we began making much better time so I said"OK with me". Soon thereafter, we reached the mouth of the Pequini and entered the Chagres. Here the Chagres is about three or four miles wide. A strong breeze came up and the going began to get tough, as we were shipping a lot of water. One of us had to bail constantly and this helped but little as the waves got higher and harder to ride. All at once we went under. The sideboards saved us some of our things, as they made the cayuca bouyant enough to keep within a foot of the surface with our packs in it. We were in the middle of the lake and about two miles from shore. By holding onto our belongings with one hand and the cayuca with the other we finally reached a large log and eventually got our boat bailed out and our kit restowed. Then we picked up our sail and a few other things that were still floating and went on. We were all thoroughly chilled, as we had been in the crocodile-infested waters for about an hour and a half, and was I scared! Within an hour we were at Madden Dam, wringing out our clothes and draining our packs. We were a pretty sight with our wet clothe clothes and carrying wet packs on our backs. Our hair had not been cut for over a month and neither had we shaved. But, we went on to Panama City, satisfied our inner cravings with a good steak and caught the train to Colon. A large tourist boat was in and the train was packed. As was the case the previous time, I rode in the train similarly attired, and hence we were the subject of much whispered conversation and speculation. I got quite a kick out of one woman who asked if we were beachcombers. She beamed all over and said, "I told you so"!, to her companions when I answered in the affirmative.

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ANOTHER ERRAND OF MERCY IN PANAMA

Once again the Air Corps in Panama was called upon to perform an errand of mercy. On January 19th word was received at Albrook Field that Senora Otila Navarrete de Morales, a government nurse in David, R.de P., was in desperate need of an immediate operation. As quickly as possible the usual formalities regarding permission for the flight were gone through and soon two Keystone B-6 Bombers were on their way. Lieuts. R.B. Landry and G.C.Clark piloted the ships. Major C.R. Glenn, Flight Surgeon, also made the trip to extend such aid as he could to the sick woman during the return trip. Within 5½ hours after the flight left Albrook Field, the sick woman was in a hospital in Panama, ready to undergo the operation.

A short while ago Capt. C.A.Ross and Lt.G.L.Mason flew to Costa Rica on a similar mission bringing Col. Campanole to Panama for medical attention.

AIR CORPS OFFICERS ASSIGNED TO TACTICAL SCHOOL

Under Special Orders of the War Department, recently issued, 57 Air Corps officers are relieved from assignment and duty at the stations they are now serving, effective at such time as will enable them to report at the proper time to the Commandant of the Air Corps Tactical School, Maxwell Field, Ala., for duty as students in the 1937-1938 course, commencing next September.

The names and present stations of these officers are given below, as follows:

Office of the Chief of the Air Corps, Washington:
Major Alfred W. Marriner (Captain)
Captain Mervin E. Gross
Captain Stewart W. Towle, Jr.

A.C. Advanced Flying School, Kelly Field, Texas:
Major Robert D. Knapp (Captain)
Major Clifford C. Nutt (Captain)
Captain Clifford P. Bradley
Captain Howard E. Engler
Captain Wilfred H. Hardy
Captain Clyde K. Rich
Captain Edgar T. Selzer
Captain Hobart R. Yeager   Capt. O.P.Weyland

Air Corps Training Center, Randolph Field, Texas
Major Charles H. Dowman (Captain)

A.C. Primary Flying School, Randolph Field, Texas:
Major Leonard D. Weddington (Captain)

Randolph Field, Texas
Captain Glenn L. Davasher
Captain Cecil E. Henry
Captain Charles W. Lawrence
Captain Charles T. Myers

Wright Field, Ohio.
Major Franklin O. Carroll (Captain)
Captain Patrick W. Timberlake

Selfridge Field, Mich.
Major Warren A. Maxwell (Captain)
Captain Harlan T. McCormick
Captain Lee Q. Wasser

Langley Field, Va.
Major Jasper K. McDuffie (Captain)
Major John F. Whiteley (Captain)
Captain Ralph E. Fisher
Captain Richard E. Nugent
Captain George F. Schulgen

Detroit, Mich.
Major Omer O. Niergarth, A.C. Procurement Planning Representative.

Mitchel Field, N.Y.
Captain Demas T. Craw
1st Lieut. Paul T. Cullen

Buffalo, New York
Captain Donald R. Goodrich, Air Corps Procurement Planning Representative.

Brooks Field, Texas
Captain Reuben Kyle, Jr.
1st Lieut. Philip D. Coates

Scott Field, Ill.
Captain James C. Shively
Captain Robert W.C. Wimsatt

Chanute Field, Ill.
Captain Benjamin T. Starkey

Fort Benning, Ga.
Captain John W. Warren

Bolling Field, D.C.
1st Lieut. Minton W. Kaye

March Field, Calif.
Major Albert F. Hegenberger (Captain)
1st Lieut. Edward H. Alexander
1st Lieut. Robert L. Schoenlein
1st Lieut. Lloyd H. Watnee

Rockwell Field, Calif.
Major Reuben C. Moffat (Captain)

Hamilton Field, Calif.
Major Carlyle H. Ridenour (Captain)
Captain Delmar H. Dunton

Fort Lewis, Wash.
Captain Everett S. Davis

Englewood, Calif.
Captain Edward M. Robbins, A.C. Representative, Northrop Corporation.

Maxwell Field, Ala.
Captain Harrison G. Crocker
Captain Clarence F. Horton
Captain Sigmund F. Landers
Captain Kenneth C. McGregor
Captain George H. Sparhawk

Philippine Department
1st Lieut. George W. Hansen

Hawaiian Department
1st Lieut. Mills S. Savage
1st Lieut. Raymond L. Winn

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FOREIGN SERVICE TOURS FOR AIR CORPS OFFICERS

The following-named Air Corps officers, on duty at the stations indicated, are under orders to stations beyond the continental limi of the United States:

To Hawaiian Department:

1st Lieuts. Harold R. Maddux and William C. Mills, from Barksdale Field, La.

1st Lieut. John R. Sutherland, from Langley Field, Va.

1st Lieut. Roger V. Williams, March Field.

To Panama Canal Department:

1st Lieuts. George D. Campbell, Jr., Roy H. Lynn and Birrell Walsh, from Hamilton Field, Calif.

1st Lieuts. Gabriel P. Disosway, Paul R. Gowen and Stephen B. Mack, from Barksdale Field, La.

To Philippine Department:

1st Lieut. Norris B. Harbold, from March Field, Calif.

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The following-named Air Corps officers, upon completion of their present tour of duty in the Panama Canal Department, are assigned to station in the United States, as follows:

Lieut. Colonel Richard H. Ballard (Major) and 1st Lieut. William D. Eckert, to Mitchel Field.

1st Lieuts. David H. Baker, Draper F. Henry and Thomas L. Mosley to Langley Field, Va.

1st Lieut. William H. Maverick to March Field, Calif.

1st Lieuts. Marshall Bonner and Charles F. Born are assigned to duty at the Air Corps Tr-ing Center, and Wm. B. Offutt to March Field. They are now stationed in the Hawaiian Dept.

The New Class at Randolph Field

(Continued from Page 2)

Compton, Lewis Griffin, Jr.	Lubbock, Texas
McClure, Hamilton	Lubbock, Texas
Bradford, Giles Edward, Jr.	Sweetwater, Texas
Roskelley, Lowell J.	Ogden, Utah
Boyer, George Leroy	Salt Lake City, Utah
Rison, Whitmell Tompkins	Chatham, Va.
Haskett, James Warren	Norfolk, Va.
Tobler, Jesse Alton	Bremerton, Wash.
Flowers, Noel Q.	Mt. Vernon, Wash.
Greene, George Banjamin, Jr.	Seattle, Wash.
Miller, Frank Carl	Seattle, Wash.
Van Ornum, Delbert George	Seattle, Wash.
Cowles, Ned Alexander	Tacoma, Wash.
Gill, David Henry	Vancouver, Wash.
Marcy, Joseph Coe	Yakima, Wash.
Waters, Rufus W.	Eau Claire, Wis.
Konopacki, Hubert J.	Manitowoc, Wis.
Watkins, Harvey Joe	Oconto, Wis.
Lunde, Oswald W.	Kewaunee, Wis.

Air Corps Enlisted Men - Privates

Carolan, Thomas F.	Chicago, Ill.	19th Airship Sqd., Moffett Field, Calif.
Coffey, Robert E.	Greenview, Ill.	6th Air Base Sqd., Barksdale Field, La.
Dick, Richard D.	Chicago, Ill.	4th Composite Group, Nichols Field, P.I.
Payne, Homer C.	College Hill, Ky.	5th Air Base Sqd., Hamilton Field, Calif.
Clark, William Coombs	Sangerville, Me.	14th Air Base Sqd., Bolling Field, D.C.
Young, Robert F.	Frestport, N.Y.	4th Obs. Sqd., Luke Field, Hawaii
Raker, Glen W.	Tulsa, Okla.	46th School Sqd., Randolph Field, Texas
Richardson, Melvin J.	Corsicana, Texas	Hqrs. Sqd. A.C. Tech. School, Chanute Field.
Bailey, J.C., Jr.	Dumont, Texas	46th School Sqd., Randolph Field, Texas

Enlisted Men of other Branches - Privates

Sewall, Albert Russell	Alhambra, Calif.	8th Field Artillery, Schofield Bks., T.H.
Bowen, John C.	Santa Barbara, Calif.	19th Infantry, Schofield Barracks, T.H.
Anneberg, Frank John	Fort Leavenworth, Kans.	Station Hospital, Fort Leavenworth, Kans.
Pinkham, Arthur G.	Dover, N.H.	13th Infantry, Fort Devens, Mass.
Richardson, Wayne F.	Milwaukee, Wis.	D.E.M.L., St. Norbert College, West De Pere, Wisconsin.

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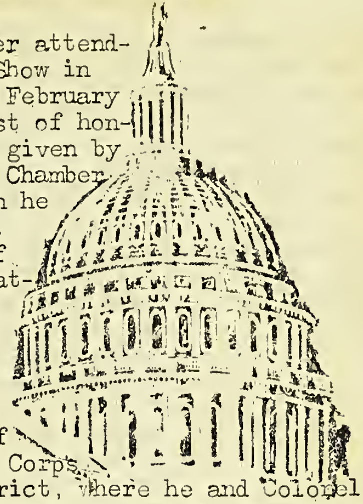
The 33rd Pursuit Squadron sent two PB-2A planes to Oscoda, Mich., for the Cold Weather Equipment Tests. Oil dilution systems were installed at Patterson Field, Fairfield, Ohio, along with other special equipment. Full combat crews included Lieut. W.R. Robertson, Corp. Prast, Staff Sgt. McCraw and Pvt. 1st Class Skrinar - Lieut. M.A. Elkins, Sgt. Pettet, Staff Sgt. Beck and Pvt. Valasek.

The 36th Pursuit Squadron sent one PB-2A to Oscoda, Mich., for the above tests, the crew including 2nd Lieut. Robert A. Gardner, Air Res., pilot; Staff Sgt. Herbert P. Hodges and Pvt. 1st Class Franklin J. Davis, crew chiefs, and Pvt. William O. Meade, Gunner.

WASHINGTON OFFICE NOTES



General Westover attended the Aircraft Show in New York City on February 2nd, and was guest of honor at a luncheon given by the Aeronautical Chamber of Commerce, when he delivered a talk.

On the night of February 2nd he attended a dinner given by the Air Reserve officers of the 2nd Corps Area and the Reserve officers of the New York Air Corps Procurement District, where he and Colonel Charles F.H. Johnson, Specialist Reserve, were honor guests.

General Henry H. Arnold delivered a short talk to the Private Aircraft Owners Association at the Biltmore Hotel, New York City, on February 5th. Colonel Benj. F. Castle, a former Air Corps officer, was his host. Mr. Juan Trippe, President of the Pan-American Airways System, was also present and delivered a speech.

Colonel Alfred H. Hobley returned from New York City on February 4th, being on temporary duty at the plant of the Seversky Aircraft Corp. at Farmingdale, L.I.

Lieut. Colonel Gerald E. Brower departed on February 10th to observe the Winter Flight Tests in the Selfridge Field - Oscoda, Mich., area.

Recent visitors to the Chief's Office were Captains George V. Holloman from Wright Field, Ohio; Randolph P. Williams from Langley Field, Va.; Edwin R. McReynolds, Langley Field; and 1st Lieut. Lloyd H. Watnee from March Field.

Lieut. Colonel Harry H. Young departed February 12th on leave of absence.

Major Morton H. McKinnon returned February 7th from a navigation flight to Dallas, Texas.

Captain Mervin E. Gross departed February 7th for Los Angeles, Calif., to ferry an O-46 plane to the Maryland National Guard.

Major Charles M. Cummings returned to Wright Field on February 9th.

Captain Luther S. Smith returned from New York City on February 6th.

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Captain Samuel C. Skemp, Air Corps, Maxwell Field, Ala., is placed on the retirement list for disability incident to the service, effective February 28, 1937, with the rank of Major from February 1, 1937.

Captain Haynie McCormick, Scott Field, Ill., was transferred to Moffett Field, Calif.

OBITUARIES

Major Charles Douglas, Air Corps, on duty as Instructor of the Illinois National Guard Aviation unit, Chicago, Ill., died on January 25th as the result of pulmonary complications.

Born in Green Bay, Wis.. February 11, 1893, Major Douglas enlisted in the Army in 1915 and served with the 21st Infantry at Vancouver Barracks, Wash., until January, 1917, when he was transferred to the Aviation Section, Signal Corps, with station at San Diego, Calif. Transferred to Flying Cadet status in September,1917, he completed ground school training at the School of Military Aeronautics, Berkeley,Calif., and flying training at Rockwell Field, Calif., and was commissioned a 2nd Lieutenant in the Aviation Section, Signal Corps, January 29, 1918.

Ordered to duty overseas, he completed advanced training as a Pursuit pilot at the Third Aviation Instruction Center, aerial gunnery training at Cazaux, France, and training at the School of Bombardment at Clermont, France. On September 1, 1918, he joined the 96th Aero Squadron at Colombey les Belles, and served with this organization at the front until October 27, 1918, when he was transferred to the 28th Aero Squadron. From April 3, 1919, to May 29, 1919, he served with the American Food Administration at Trieste, Italy, and Paris, France.

Returning to the United States in June,1919, Major Douglas, assigned to duty at Kelly Field, Texas, where he served until February, 1922, when he was detailed to take a course of instruction at the Air Service Communications School at Post Field, Fort Sill, Okla. Graduating from this School in June, 1922, he returned to Kelly Field and was stationed there until June, 1923, when he was placed on duty with Air Service troops at Fort Bliss, Texas, and later was stationed at Fort Sam Houston, Texas. In October, 1928, he completed the Special Observers' Course at the Advanced Flying School at Kelly Field, Texas, and was rated "Airplane Observer."

Transferred to the Philippines, Major Douglas served at Nichols Field from June, 1929, to June, 1931, and was then assigned to March Field, Calif., for duty with the 19th Pursuit Group. Upon graduation in June, 1935, from the Air Corps Tactical School, Maxwell Field, Ala., he was assigned to duty as Instructor, Air Corps, Illinois National Guard.

First Lieut. J.B. Zimmerman, Air Corps, died January 29, 1937, as the result of injuries sustained in an airplane crash the preceding day. The airplane crashed and burned at Front Royal, Va., while he was engaged on a cross-country ferry trip.

Lieut. Zimmerman was born at Sterling, Kans., April 13, 1907. He was appointed to the United States Military Academy and graduated with the class of 1931. Before entering the Academy, he attended Sterling College, Sterling, Kansas, for two years, and Kansas University, Lawrence, Kansas, for one year.

Lieut. Zimmerman graduated from the Air Corps Training Center in 1933, specializing in Pursuit Aviation. He was on duty as Assistant Air Corps Supply Officer at Langley Field, Va., since his arrival from the Philippine Department in January, 1936. He is survived by his wife, a son and a daughter. His parents, Mr. and Mrs. Joseph B. Zimmerman, reside at Sterling, Kansas, where the burial of the deceased took place.

The sincere sympathy of the Air Corps is extended to the bereaved families of the deceased officers.

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WAR DEPARTMENT ORDERS

Changes of Station: To Baltimore, Md.: Lt. Col Ernest Clark (Major) from Selfridge Field to duty at Headquarters, 3rd Corps Area.

To Langley Field, Va.: Colonel H.C. Kress Muhlenberg from Hqrs. 3rd Corps Area.

To Hawaiian Department: 1st Lieut. James S. Olive, from Mitchel Field, N.Y., and 2nd Lieut. Dolf E. Muehleisen from March Field, Calif.

To the Philippines: 2nd Lieut. Paul E. Todd from March Field, Calif.

To Selfridge Field, Mich.: Major Wm. D. Wheeler from Hawaiian Department.

To Fort Leavenworth, Kansas: Major Theodore J. Koenig, Mitchel Field, designated as student for the 1937-1938 course at the Command and General Staff School.

Transfers: 2nd Lieut. James W. Totten, Air Corps, to the Field Artillery, January 25, 1937, and assignment to 5th Field Artillery at Madison Barracks, N.Y.

Relieved from Air Corps: 1st Lieut. William J. Hanlon, Cavalry, from assignment and duty at the Air Corps Training Center, and to duty with the 1st Cavalry Division at Fort Clark, Texas.

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The following officers of the Air Reserve were assigned to active duty for a period of three years at the stations indicated:

2nd Lieut. Ladson Green Eskridge, Jr., of Newberry, S.C., to February 10, 1940, and 2nd Lieut. Edward August LePenske, of Tacoma,Wash., to January 31, 1940, both to Langley Field, Va.

2nd Lieuts. Arlen Everett McCarty, Hood River, Oregon; George Irving Rhoades, Tulsa, Okla., and Charles Milton Fischer, Kansas City, Mo., to February 14, 1940. Lieuts. McCarty and Fischer were assigned to March Field, Calif., and Lieut. Rhoades to Mitchel Field, N.Y.

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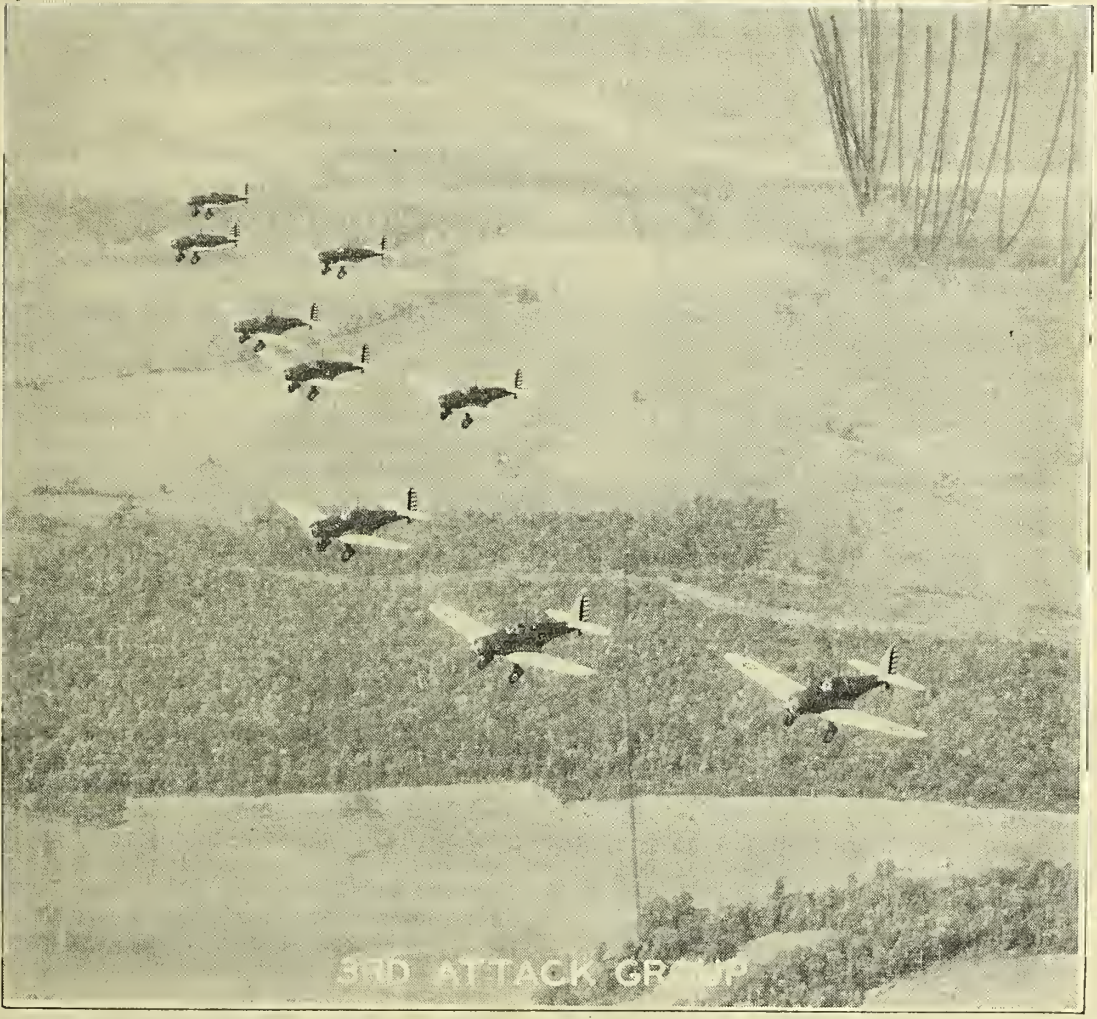
Special Orders of the War Department, recently issued, assigned the following-named Air Corps officers to duty as students in the 1937-1938 course at the Air Corps Engineering School, Wright Field, Ohio:

Captain Frank G. Irvin, 1st Lieuts. Merrill D. Burnside and Cjharles L. Munroe, Jr., from Wright Field, Ohio.

1st Lieut. Mark E. Bradley, Jr., Scott Field.

1st Lieut. Daniel F. Callahan, Jr., Brooks Field, Texas. 1st Lieut. Clark N. Piper, Barksdale Field, La., 1st Lt. Samuel R. Brentnall, A.C. Representative, Stearman Aircraft Factory. Wichita, Kansas.

AIR CORPS
NEWS LETTER



3RD ATTACK GROUP

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VOL. XX AIR CORPS NEWS LETTER NO. 5.

Information Division
Air Corps
March 1, 1937
Munitions Building
Washington, D.C.

The chief purpose of this publication is to distribute information on aeronautics to the flying personnel in the Regular Army, Reserve Corps, National Guard, and others connected with aviation.

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THE ARMY AIR CORPS FOR 1936 - A REVIEW

Ed. Note: The review of Air Corps activities and various aeronautical events during the calendar year 1936, as hereinafter given, is not intended as a full and complete chronology thereof. The necessary time involved to conduct the required amount of research work in order to compile a complete chronology has not been available. Furthermore, space is lacking for the publication of a more complete report. It is believed, however, that the chronology of events given hereinafter will give the reader a fair idea of the various activities in which the Air Corps was engaged during the past year.

THE GENERAL HEADQUARTERS AIR FORCE

Faster airplanes, an improved plan of organization and a greatly heightened morale for all members, were objectives achieved during the calendar year 1936 by the General Headquarters Air Force.

Air power of the United States was increased in spite of the fact that over-age airplanes were retired almost as fast as new airplanes were added to the Air Force. Higher speeds, bigger loads, and enlarged cruising radii have definitely strengthened the air defense of the continent.

In reviewing the accomplishments of the GHQ Air Force for the past year, Major General Frank M. Andrews, its Commanding General, stated recently:

> "We think we are headed on the right path. It is believed that in 1936 we made substantial progress on the road to a smooth working, efficient air force. The addition of the new types to our complement of planes has had an important effect on the training and especially on the morale of the pilots and mechanics.
>
> For example, the Seventeenth Attack Group of March Field was equipped solely with obsolete Pursuit planes when the GHQ Air Force was organized on March 1, 1935. During 1936, this old equipment was replaced by new Northrop Attack airplanes (A-17) direct from the Inglewood factory."

The increase in the multi-place equipment of the GHQ Air Force has given the enlisted men in the affected squadrons more opportunities to accompany their officers on flying missions as gunners, crew chiefs, and radio operators.

The acquisition of the 18 new Douglas C-33 transports during 1936 gives the air bases and the air depots the opportunity to expedite the delivery of engines and the quick transport of mechanics and other personnel to airdromes near the theatres of operations during maneuvers.

The staff of the GHQ Air Force wishes to point out, however, that the increased speeds of the new planes have not increased the mobility of the Army air unit. Without additional bases in certain strategic areas, the mobility of the Air Force will remain substantially the same as on its founding day, March 1, 1935.

Substantial but unsensational progress was made in other branches of GHQ Air Force activity. Supplies were moved easier; Ordnance organization was improved and increased, and the Chemical Warfare Service was heard from. In a prepared statement, Lieut. Colonel Edward Montgomery, Chemical Warfare Service Officer at GHQ Air Force Headquarters, said:

> "In May, 1936, a number of GHQ Air Force officers were graduated from the Chemical Warfare School. The return of these officers to their regular stations and their appointment as base and unit chemical officers, marked the commencement of comprehensive chemical warfare training throughout the Air Force. By fall this training was being carried out in a standardized way at all bases by means of schools for officers and noncommissioned officers, unit training and recruit instruction."

In connection with the above statement, Air Corps News Letter readers will remember a 1936 cover in which clerks were depicted working at their desks with gas masks being worn. Hangar crews also worked for brief periods so attired.

Reorganization of the GHQ Air Force occurred on September 1, 1936. As the average reader knows, the Station Complements disappeared and in their stead were created the existing Air Base Squadrons. As the year drew to a close, the creaks and groans incidental to the working of all new machinery largely disappeared and the morale of the officers and enlisted men seemed to be on the upturn as a result of the new set-up.

In the following paragraphs, notable events of the last calendar year will be briefly described:

Cold Weather Test Flights in New England Area: Several units of the Air Force conducted cold weather tests of winter equipment in the New England area from February 1st to the 15th, under the supervision of General Andrews. Designed to ascertain the effectiveness of Air Corps personnel and equipment under severe weather conditions, these tests provided a great deal of data for the Air Force headquarters. Particular note was taken of the tremendous effect of the cold weather on the appetites of the personnel of Barksdale Field, La.

The Barksdale Field report states that their contingent had all airplanes running all day. Much favorable comment was heard on all sides about the splendid reception given to both commissioned and enlisted personnel by the New England populace. As the creation of favorable public sentiment is considered one of any maneuver's objectives, this item must be added to the plus score of the fourteen days.

GHQ Air Force Unit Aids Flood Sufferers

Almost from the beginning of Army air history, Army airplanes have been dashing to the aid of flood sufferers. So it was in the spring of 1936 when the Second Bombardment Group, acting on verbal orders of the Second Wing Commander, Brigadier General Henry C. Pratt, dropped 8,000 pounds of food and medical supplies to communities in Pennsylvania. Major Robert E. Cronau was in command of the 30 airplanes, 45 officers and nearly 100 enlisted men who participated in the mercy work.

Martin Bombers Ferried to Panama

Pilots and mechanics of the 2nd Bombardment Group of Langley Field last spring had the pleasant and worthwhile detail of ferrying nine new Martin Bombers from the Martin factory to Panama. The flight was led by Colonel Charles B. Oldfield and flew via Brownsville, Texas; Mexico, and several Central American countries. The Bombers proved a boon to the defenders of the water artery.

Other Important Events

Other events of importance include the heroic deeds of Sergeant Norris and Corporal Musser; the participation of GHQ Air Force units in the Second Army Maneuvers during the summer; the Joint Army-Navy exercises off the coasts of Virginia and the State of Washington in the fall; the Bakersfield, Calif., exercises of the First Wing; and the award of the Colombian Trophy for safety in flying to the Third Attack Group by General Andrews at Barksdale Field.

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CHRONOLOGY

Personnel - Appointments, Changes, etc.

Colonel Gerald C. Brant, Commander of the 3rd Attack Group, Barksdale Field, La., was appointed to the temporary rank of Brigadier General from January 9, 1936.

Forty-eight Flying Cadets of the Air Corps, who graduated from the Advanced Flying School, Kelly Field, Texas, in February, 1935, and who completed their additional year of training with Air Corps tactical units on February 29, 1936, were commissioned second lieutenants in the Air Reserve and assigned to extended active duty, March 1, 1936, at various Air Corps stations.

The War Department, in response to the President's approval of the Bill (H.R. 11920) to increase the efficiency of the Air Corps, made a revision of the then unsatisfactory method of temporary promotion in the Air Corps, experience having shown that the prior method of selecting officers for temporary promotion was productive of many evils, since the selections were made from the standpoint of expediency rather than seniority. Under the new Act, which repealed all previous temporary promotions, the shortage in the Air Corps of officers above the rank of Captain was made up by the temporary promotion of officers taken from the top of the relative rank list. This resulted in the temporary promotion of 12 Lieut. Colonels to Colonel, 36 Majors to Lieut. Colonel and 204 Captains to Major, effective June 16, 1936.

On August 26th, in accordance with the provisions of the Act of Congress cited above, 148 Air Corps officers received temporary promotions, viz: 20 Lieut. Colonels to Colonel, 29 Majors to Lieut. Colonel, and 99 Captains to Major.

Under the Bill, H.R. 11920, the President, on the recommendation of the Secretary of War, nominated the following Air Corps officers for temporary promotion to the rank of general officer, viz: Colonel Frank M. Andrews, Commanding the GHQ Air Force, to Major General; Cols. Henry C. Pratt, Gerald C. Brant, Barton K. Yount, Lieut. Colonels Delos C. Emmons and George H. Brett to Brigadier General.

Fifty-Six Flying Cadets, who graduated from the Advanced Flying School, Kelly Field, Texas, June 22, 1935, and who on that date completed a year of active duty with Air Corps tactical units under their cadet status, were commissioned second lieutenants in the Air Reserve, and assigned to further active duty under their status as Reserve officers. Similarly, 28 Flying Cadets, who completed their year of active duty with tactical units on October 14th, were commissioned second lieutenants in the Air Reserve and placed on further active duty. Three of these 28 Cadets passed the examination for appointment as commissioned officers in the Air Corps, Regular Army.

A total of 33 officers graduated on June 30th from the Air Corps Technical School, Chanute Field, Ill., 3 of them pursuing the aerial photographic course; 12, Communications; and 18, Engineering.

Colonel Arnold N. Krogstad assumed command of the Air Corps Advanced Flying School, Kelly Field, Texas, on July 2nd, relieving Colonel Jacob E. Fickel, who was assigned as Air Officer of the 9th Corps Area.

Colonel Harrison H.C. Richards, Air Corps, was assigned as Chief of the Information Division, Office of the Chief of the Air Corps, July 15, 1936, vice Colonel John D. Reardan, assigned as Air Corps Procurement Planning Representative, New York City.

Colonel Henry B. Clagett assumed command of Selfridge Field, Mich., on August 27, 1936.

The commissioned ranks of the Air Corps were increased on October 1, 1936, to the extent of 50 new officers, all graduates of the Air Corps Training Center, who were appointed under the Act of Congress, approved August 30, 1935.

Colonel Davenport Johnson assumed command of Hamilton Field, Calif., on November 19th, succeeding Colonel Clarence L. Tinker, transferred to Washington, D.C., for duty with the National Guard Bureau.

PURCHASE OF NEW AIRPLANES

The Secretary of War announced that 506 airplanes had been delivered to the Army Air Corps by contractors during the calendar year 1936. This is the largest number of airplanes which have ever been delivered during any year since the adoption of modern all-metal construction.

During the calendar year 1936, announcements were made by the War Department of the approval of the award of the following contracts for new airplanes for the Army Air Corps:

June 16: To the Seversky Aircraft Corporation of Farmingdale, L.I., New York, for 77 single-seater Pursuit airplanes and of spare parts equivalent to 8 airplanes, at a total cost of $1,636,250.

July 23: To the Curtiss Aeroplane and Motor Company, Buffalo, N.Y., for 13 new Attack planes (YA-18) bi-motored, at a total cost of $1,259,235. This plane, a development over the past two years by the Curtiss Company in cooperation with Air Corps engineers, combined very high performance with long range and improved safety characteristics. It is believed to be the only two-engine Attack plane in the world.

July 28: To the Stearman Aircraft Co., Wichita, Kansas, for 50 Primary Training planes, at a total cost of $329,659.

August 8: To the Curtiss Aeroplane and Motor Company for three high performance single-seater Pursuit planes of a new type, to be known as the Y1P-36.

October 26: To North American Aviation, Inc., of Inglewood, Calif., for 117 Basic Training planes (single-engine biplace low-wing monoplane), spare parts, etc., at a total cost of $1,432,600.

November 18: To North American Aviation, Inc., for 109 O-47A Corps and Army Observation airplanes, and spare parts equivalent to 11 additional planes, at a total cost of $3,429,600.

December 4: To the Stearman Aircraft Company, for 28 Primary Training airplanes (PT-13A) with spare parts, at a total cost of $146,720.25. This biplane, with a two-place tandem arrangement, is powered with a 7-cylinder air-cooled Lycoming engine of 125 horsepower.

Engines

March 11: To the Wright Aeronautical Corporation, Paterson, N.J., for 512 new aircraft engines, of which 432, known as the Wright "Cyclone" R-1820-G, 9-cylinder, air-cooled, the most powerful single-row radial aircraft engine in the world, were intended for installation in new Bombardment planes, while the remaining 80 engines, 9-cylinder Wright 'Whirlwind" type, were intended for installation in new Basic Training monoplanes. Amount of contract, $3,850,000.

March 31: To the Pratt & Whitney Aircraft Corporation for 200 new R-1535-13 air-cooled, two-row radial type engines, at a total cost of $1,877,030.

August 3: To the Wright Aeronautical Corporation for 150 Wright "Cyclone" engines, rated at 1,000 horsepower, at a total cost of $1,327,190.

New Airplanes

H.R. 11140, an Act to increase the effectiveness and efficiency of the Air Corps, approved June 24, 1936, amended the Air Corps Act of July 2, 1926, by increasing the authorization therein of 1,800 serviceable airplanes to 2,320 airplanes.

Illustrating the greatly increased cruising range now possible with the new Northrop Attack airplane, Lieut. Charles B. Overacker, 17th Attack Group, made a non-stop round trip from March to Hamilton Field, involving a total distance of 814 miles, in 5 hourd and 35 minutes.

DECORATIONS AND AWARDS

Decorations and awards made during the calendar year 1936 to Air Corps personnel for heroic conduct or distinguished service in connection with flying are enumerated below, as follows:

Distinguished Flying Cross:

Captains Albert W. Stevens and Orvil A. Anderson, Air Corps, were awarded the Oak Leaf Cluster to the Distinguished Flying Cross for their participation in the National Geographic - Army Air Corps Stratosphere Flight, which started from the vicinity of Rapid City, South Dakota, November 11, 1935, during the course of which the balloon ascended to 72,395 feet, the greatest height ever attained by man. Captain Stevens was the commander and scientific observer on this flight, and Captain Anderson the pilot and assistant scientific observer. Kelly Field, Texas, on March 7, 1936, was the scene of the presentation of this decoration to Capt. Anderson by Brigadier General James E. Chaney, Commanding General of the Air Corps Training Center, while on May 12, 1936, at Wright Field, Dayton, Ohio, Major General William E. Cole, Commanding General of the 5th Corps Area, made the presentation of the decoration to Captain Stevens.

The Distinguished Flying Cross was posthumously awarded to Major Hez McClellan, Air Corps, for extraordinary achievement as commanding officer and pilot on a cross-country flight from Washington, D.C., to Nome, Point Barrow, and other Alaskan points during the summer of 1935.

The War Department announced the award of the Distinguished Flying Cross to Captains Frank G. Irvin and John S. Griffith, Air Corps, for heroism while participating in an aerial flight from Wright Field, Ohio, to Indianapolis, Ind., on July 22, 1936. While making a carbon monoxide test flight of a new airplane at an altitude of 2,000 feet, the engine burst into flames. The two officers, without thought of themselves, directed the crew of civilian observers to jump with their parachutes, and then, by using fire extinguishers and switching off gas valves, succeeded in extinguishing the fire, thereby preventing not only possible loss of life but destruction to government property as well.

Announcement was made by the War Department of the award of the Distinguished Flying Cross to Brigadier General Henry H. Arnold, Air Corps, for extraordinary achievement while participating in an aerial flight as pilot and commanding officer of a squadron of ten Bombardment airplanes from Washington, D.C., to Fairbanks, Alaska, and return, from July 19, 1934, to August 20, 1934.

Four members of the Air Corps were awarded the Distinguished Flying Cross for participating in an errand of mercy which was instrumental in saving the lives of seven men who were stranded on an ice floe in Cape Cod Bay. During the course of the Winter Test Maneuvers in the New England States, Major Barney M. Giles, of Langley Field, accompanied by 2nd Lieut. James H. Patrick, Air Reserve; Staff Sergeant Donald E. Hamilton and Corporal Frank B. Connor, departed shortly after midnight, February 10th, from Concord, N.H., to locate seven CCC youths, marooned on drifting ice off their Camp at Brewster, Mass. Major Giles located a tiny dot on the ice which he was soon able to identify as the boys, and then proceeded to circle the floe and radio its position to shore parties and Coast Guardsmen. Airplanes promptly arrived over the scene and dropped food and blankets to the imperiled youths.

The Soldier's Medal

The Soldier's Medal was presented on April 27, 1936, to Corporal Clyde E. Gilmore, 44th Observation Squadron, Albrook Field, Canal Zone, by Major General Lytle Brown, Department Commander, for heroism in saving the life of a fellow soldier, whose clothing caught fire from a sudden gasoline blaze in a hangar. Overtaking this soldier, who was running from the scene of the fire, Corporal Gilmore succeeded in throwing him to the ground and removing his blazing clothing.

On May 12, 1936, at Wright Field, Dayton, Ohio, the Soldier's Medal was presented by Major General William E. Cole, Commanding General of the 5th Corps Area, to Lieut. L.F. Harman, Air Corps, for valiant rescue work performed at the risk of his own life upon the occasion of the crash of the Boeing Bomber at Wright Field during a test flight in October, 1935, and which resulted in the death of the pilot, Major Ployer P. Hill, and Mr. Leslie Tower, test pilot of the Boeing Company.

The War Department announced the award of the Soldier's Medal to Staff Sergeant Willie D. Norris and Sergeant Wayne M. Musser, Air Corps, for heroism displayed at Langley Field, Va., August 31, 1936. During the installation of time fuzes on six large experimental flares hanging from the bomb bay racks of an airplane and withdrawing the safetying pins from them a noise, diagnosed as the time fuze functioning of one of the flares, was heard. Sergeant Norris held a flashlight while Sergeant Musser unlatched the ticking flare and ran with it in his arms towards the flying field. After reaching a point about 20 feet from the bomb bay, the flare exploded, shooting the burning flare back toward the airplane under the left wing near the fuselage, where the intense heat ignited the wing. In his attempt to escape from the airplane, the pilot sprained his ankle and Sergeant Musser, seeing his plight, assisted in carrying him to a place of safety. The heroic and timely actions of these two noncommissioned officers prevented the possible loss of human life and undoubtedly great destruction to valuable government property.

The Mackay Trophy

June 23, 1936, marked the 23rd annual award of the Mackay Trophy, which is presented to Air Corps officers for each year's most outstanding flight achievement. The recipients of this Trophy for 1935 were Major Albert W. Stevens and Captain Orvil A. Anderson, Air Corps, for their stratosphere flight on November 11, 1935.

The Cheney Award

Announcement was made on January 19, 1936, of the selection of 1st Lieut. Robert K. Giovannoli, Air Corps, for the Cheney Award for 1935, for an act of heroism in connection with the rescue of Major Ployer P. Hill, Air Corps, and Mr. Leslie Tower, civilian test pilot, from a burning experimental bombing plane which crashed during a test flight at Wright Field, Ohio, in October, 1935. Both Major Hill and Mr. Tower later succumbed to their injuries. Fate was also unkind to the hero in this tragedy when, several months later, Lieut. Giovannoli lost his life in an airplane accident.

The Frank Luke Trophy

The American Legion of Arizona, on September 3rd, presented the Frank Luke, Jr., Memorial Trophy to the 79th Pursuit Squadron, GHQ Air Force, for making the highest aggregate score in annual gunnery record firing. Three six-plane flights of the 79th Squadron, Barksdale Field, La., were flown to Phoenix, Arizona, on September 2nd, and on the following day a demonstration was staged of Pursuit maneuvers for 30 minutes over Phoenix. Flowers were dropped from one plane on the Luke Memorial Statue in front of the State Capitol. The formal presentation of the Luke Trophy was made to the Squadron by Mr. T.T. Brooke, Department Commander of the American Legion, assisted by the Governor of Arizona.

The Colombian Trophy

The Third Attack Group, Barksdale Field, La., won the Colombian Trophy for greater safety in flying than any other similar organization in the Army Air Corps. This Trophy, a gift to the Air Corps by the Republic of Colombia, was presented to the Group with appropriate ceremonies on December 9th by Major General Frank M. Andrews, Commanding General of the GHQ Air Force, who flew to Barksdale Field especially for that purpose.

Commendation

For landing a Martin Bomber with three passengers in a small, unprepared space near Gila Bend, Arizona, with exceptional courage, good judgment and piloting skill, on June 10, 1936, 2nd Lieut. Arno H. Luehman, 32nd Bombardment Squadron, March Field, Calif., was highly commended by the Chief of the Air Corps, the Commanding General of the GHQ Air Force, and other high ranking Air Corps officers.

THE WINTER TEST MANEUVERS

Officers and enlisted men from Barksdale, Langley, Mitchel and Selfridge Fields, organized as a provisional group, under the command of Lieut. Colonel Adlai H. Gilkeson, Commanding Officer of the 8th Pursuit Group, Langley Field, Va., were engaged in conducting cold weather tests of clothing and equipment in the New England area.

The Group was composed of the 8th Pursuit Group Hqrs., Langley Field, with 6 officers, 11 enlisted men and 6 planes; a Bombardment Squadron from the 2nd Bombardment Group, Langley Field, Va., with 20 officers, 20 enlisted men and 10 Martin Bombers; an Attack Squadron from Barksdale Field, La., with 20 officers, 20 enlisted men and 20 Curtiss Attack planes; one Pursuit Squadron from the 20th Pursuit Group, Barksdale Field, La., with 20 officers and 20 Boeing Pursuit planes, and one service detachment each from Selfridge, Mitchel and Langley Fields, consisting of 90 enlisted men, 6 officers and 6 Cargo planes.

The localities selected as bases for the exercises were Mitchel Field, N.Y.; Burlington, Vt., and Concord, N.H. Although the tactical situations were made secondary to the testing of clothing and equipment, the report showed a total of 437 tactical missions accomplished in 1100 hours of flying over approximately 150,000 miles. Adding 1500 hours of non-tactical flying (including transport movements, movement of units getting into position for tactical operations and staff movements), gives a total of 2600 hours flown over approximately 300,000 miles. In the transport flights, numbering 100, no accidents of any description were encountered, despite landings on and take-offs from ice and snow-covered runways by pilots unfamiliar with cold weather operations. In the 2600 hours of flying, there were three accidents, all minor in character.

The airplanes were in the open without the facilities and protection of heated hangars. Among some 130 items of clothing and equipment tested were skis for Pursuit and Attack planes, special oil for machine guns, tents with sleeping bags and pneumatic mattresses, flying clothing, engine heaters, covers and fire pots of varying designs, heaters for cabins of transport planes, improved priming systems, engine starting accessories, portable night lighting equipment, special grades of oils and lubricants, etc.

The Maneuvers were conducted from February 1st to 15th, and involved three phases, viz: attack of Bombardment planes on Pursuit and Attack planes; attack of Pursuit by Bombardment and Attack planes, two tactical situations but at different localities.

TRAINING AND MANEUVERS

1st Wing, GHQ Air Force:

The 1st Wing of the GHQ Air Force, with the exception of the 19th Airship Squadron at Moffett Field, Calif., and the 19th Bombardment Group, March Field, Calif., concentrated at Muroc Dry Lake in the Mojave Desert for bombing and gunnery maneuvers from March 10th to 20th. Participating in these maneuvers were 110 officers and 700 enlisted men, utilizing 55 combat airplanes. Concrete bombs were tried out during these exercises for the first time in the history of the Air Corps. These weigh exactly the same as the others and have a reasonable degree of accuracy.

In the Spring, Squadrons of the 7th Bombardment Group, Hamilton Field, Calif., began taking their turn in two-week periods of intensive training at Mather Field, Calif.

The 31st Bombardment Squadron operated in squadron maneuvers at Mather Field, May 1 to 29, 1936.

The 7th Bombardment Group, on July 17th, conducted a group interception of a ship at sea. The Transport MEIGS was intercepted an hour and seven minutes after the Group left the Golden Gate.

The 30th Bombardment Squadron returned to March Field on October 13th, after ten days of maneuvers and range practice in the Pacific Ocean off Long Beach, Calif.

Bakersfield, Calif., was the scene of one of the greatest series of Army Air Corps maneuvers held in any West Coast municipality in recent years. The 34th Attack Squadron from March Field was the first unit to take the field and was encamped at Bakersfield from October 21st to 28th, followed by the 73rd Attack Squadron, from October 28th to November 4th, and the 95th Attack Squadron for the week ending November 11th. The entire 17th Attack Group, consisting of about 50 officers, 200 enlisted men and 24 of the newest Northrop Attack planes, was encamped at Bakersfield from November 11th to 18th, the missions mainly performed being those of dispatching Attack planes daily to the Muroc Dry Lake for bombing and gunnery practice.

Group Maneuvers of the 19th Bombardment Group (30th and 32nd Bombardment Squadrons, 38th Reconnaissance Squadron and 23rd Photo Section) took place at Bakersfield, Calif., between November 14th and 21st, when 40 officers and 250 enlisted men were encamped at the airport.

The 9th Bombardment Squadron returned to Hamilton Field from a most successful field exercise at Stockton, Calif. Sixteen officers, 5 Flying Cadets and 96 enlisted men participated, and a week of perfect weather made possible a diversified, interesting and complete training maneuver.

The 31st Bombardment Squadron returned to Hamilton Field, Calif., on December 8th after a week's stay at Fresno, Calif., where maneuvers were conducted.

The 88th Reconnaissance Squadron returned to Hamilton Field from a field exercise at Redding, Calif., seven days being spent in the field, of which three were used for search and patrol missions and two on reconnaissance and aerial photographic missions.

2nd Wing, GHQ Air Force:

From May 22nd to June 6th, the First Pursuit Group, Selfridge Field, Mich., was based in the area of Midland - Bay City - Saginaw and Camp Skeel, Oscoda, Mich., for the purpose of participating in group maneuvers.

During the participation of the 2nd Bombardment Group in the Second Army Maneuvers, 18 B-10B airplanes from the 49th and 96th Bombardment Squadrons executed on August 1st a simulated bombing assault on Chanute Field, Ill. On August 2nd, with the support of Attack units from Barksdale Field, La., the Group "assaulted" the enemy ground forces at Fort Knox, Ky.

On the night of August 7th, a 3-plane formation from the 49th Bombardment Squadron made an assault on Fort Knox, Ky.

On August 9th, a formation of 15 B-10B planes from the 49th and 96th Squadrons were flown to Selfridge Field, Mich., for an aerial review over the Allegan Area the following day. Attack units from Barksdale Field and Pursuit units from Selfridge Field also participated in this demonstration.

Three B-10B planes from the 96th Squadron were flown from Langley Field on August 13th to stage a night attack on enemy ground forces concentrated in the Allegan Area.

The last mission to be flown in connection with the Second Army Maneuvers was an aerial review over the Allegan Area on August 20th. The 2nd Bombardment Group furnished 10 B-10B airplanes for this review.

The Second Bombardment Group actively participated in the maneuvers utilizing the fighting forces of both the Army and Navy, held off the Virginia-Carolina coast, which created national interest. The use of Air Corps Reconnaissance and Bombardment organizations in coast defense tactics was a unique and highly enlightening experience for all officers and enlisted men concerned. Daily missions were flown out over the ocean for distances varying from 50 to 125 miles, which flights culminated with the bombing of targets towed on the surface by naval vessels.

A formation of four A-8 Attack planes of the 37th Attack Squadron, Langley Field, Va., participated in the Second Army Maneuvers for a period of three days, August 6th - 8th.

The 8th Pursuit Group Headquarters, Langley Field, departed August 12th for Virginia Beach, Va., to engage in field exercises for a period of two weeks, using the new PB-2A airplanes.

3rd Wing, GHQ Air Force:

The quarterly test of the 90th Attack Squadron, Barksdale Field, La., with full field equipment, was conducted from April 6th to 10th at Natchitoches, La.

A flight of 17 A-17 Attack planes departed from Barksdale Field, La., August 1st, for Selfridge Field, Mich., to participate in the maneuvers of the Second Army.

During the period from September 7th to 12th, the 90th Attack Squadron, Barksdale Field, La., carried out squadron field exercises at Fort Crockett, Texas. Twelve A-17 Attack planes were flown in these exercises.

The 20th Pursuit Group, Barksdale Field, La., took off on October 13th, and for several days staged maneuvers over several cities in Texas. The 79th Pursuit Squadron was based at Houston, the 77th at Beaumont and the 55th at Fort Crockett.

The 77th Pursuit Squadron, Barksdale Field, conducted interception problems at Natchitoches, La., for the period of one week.

For a period of five days, the 79th Pursuit Squadron, Barksdale Field, La., occupied the field camp at the Municipal Airport at Natchitoches, La., where field exercises were conducted.

The period between October 26th and November 5th found the 20th Pursuit Group (55th, 77th and 79th Pursuit Squadrons) of Barksdale Field, at the Shushan Airport, New Orleans, La., working interception problems with the 3rd Attack Group. Daily missions took the Pursuiters to several cities in the south, among them Pensacola, Fla., Montgomery and Mobile, Ala. For the most part, the 3rd Attack Group simulated the enemy forces for the 20th Pursuit Group.

Other Air Corps Organizations:

The 16th Pursuit Group, Albrook Field, Canal Zone, completed its annual period of field training on March 27th, after operating for approximately two weeks on the temporary airdrome at Aguadulce, Panama. The feature of the maneuvers was the night operations from the newly improvised field at Aguadulce, this marking the first time such operations were conducted in the Panama Canal Department from auxiliary fields. Most of the night work fell to the 25th Bombardment Squadron, France Field, which cooperated with the Pursuit Group in a number of missions. The field at Aguadulce was lighted by kerosene pots, and two anti-aircraft searchlights were used in lieu of floodlights. The planes of the 16th Pursuit Group were flown a total of 468 hours on 40 tactical missions.

Six pilots from Brooks Field, Texas, in three O-43 planes, participated in maneuvers at Fort Leavenworth, Kansas, June 4th to 19th, and at Fort Sill, Okla., from June 20th to 27th.

Starting June 27th, the Air Corps took a hand in a five-day "war" which constituted the closing exercises of the graduating class of the Field Artillery School at Fort Sill, Okla. The 1st Balloon Squadron and Flight E, 16th Observation Squadron, assisted by three A-17 Attack planes from Barksdale Field, La., and three O-43 Observation planes from Brooks Fiel Texas, performed photographic and visual reconnaissance missions. In addition, the Attack planes "strafed" and laid smoke screens for the further education of the student officers.

A formation of eight B-12A planes from Luke Field, T.H., executed on September 7th a successful interception mission with the U.S. Army Transport REPUBLIC. The Transport was intercepted while approximately 175 miles from Makapuu Head, equivalent to a half day's steaming. The interception was actually effected within 15 seconds of the hour scheduled.

During the training year 1936, the 91st Observation Squadron, transferred from Crissy Field, Calif., to Fort Lewis, Wash., with a daily average of seven planes in commission, amassed a total of 5,398 aircraft hours. In cooperation with other branches of the military service, a total of 542 hours was flown and 331 hours of night flying were accumulated between foggy nights at Crissy Field.

MANEUVERS IN COOPERATION WITH OTHER BRANCHES

The 91st Observation Squadron, with the 15th Photo Section attached, stationed at Crissy Field, Calif., completed field maneuvers with the Sixth Brigade. From April 12th to 29th, these organizations were encamped at the Watsonville Airport, about 100 miles south of San Francisco.

During the months of May and June, the 15th Observation Squadron, Scott Field, Ill., carri out cooperative missions with other branches of the Regular Army at Fort Knox, Ky., Fort Sheridan, Ill., and Manitowoc, Wisconsin.

Three A-17 planes of the 13th Attack Squadron, Barksdale Field, La., were flown on June 20th to Fort Sill, Okla., where, joined by three O-43 planes from Brooks Field, Texas, they constituted the "Red Air Force" in general field exercises of the Field Artillery graduating class, which extended over a period of 4 days.

Flight A of the 16th Observation Squadron, Langley Field, Va., arrived at Bolling Field, D.C., Sept. 19th, and was encamped there for three weeks while performing cooperative missions with the Infantry from Fort George Meade, Md., and the Field Artillery from Fort Hoyle, Md.

The 63rd Coast Artillery (Anti-Aircraft) from Fort MacArthur, Calif., conducted searchlight practice at March Field, Calif., during the latter part of September and first half of October. A plane from the 19th Bombardment Group, March Field, was used in the nightly problems. In the final, or record problem twelve planes were employed.

Three Bombardment planes were flown from Luke Field, T.H., to Maui on September 23rd, and for two days a series of cooperative missions were carried out in connection with the annual encampment of the 299th Regiment, Hawaii National Guard.

During the week of November 9th, all units in Hawaii were engaged in the Hawaiian Department Military Competitions, an annual event inaugurated in 1936 by Major General Hugh A. Drum, Department Commander. The 18th Composite Wing, embracing the 5th Composite Group of Luke Field and the 18th Pursuit Group of Wheeler Field, participated in military events in competition with other organizations in such activities as recruit drill, tent pitching, personal appearance and equipment events, and events for motor transportation. A number of flying events by the Air Corps was staged.

DEMONSTRATIONS

Coordination of the Attack Aviation course at the Air Corps Tactical School with the present work carried on by the Third Attack Group was effected in part by a demonstration at Maxwell Field, Ala., on January 27th, when nine A-12 planes of the 8th Attack Squadron, commanded by Major Lester J. Maitland, were utilized in a simulated attack on an enemy airdrome through the spraying of chemicals and the dropping of parachute bombs.

Personnel of Bolling Field, D.C., took an active part on April 6th in the Army Day parade in Washington. A P-26 airplane, mounted on a flat trailer trimmed with Corps colors and surrounded by a marching squad of soldiers, made an impressive float.

On Army Day, a two-flight formation from Barksdale Field, La., flew over the city of Shreveport for an extended period, dropping parachute flares well away from the danger areas but visible from anywhere in the city. Continuous communication between the planes and two Shreveport radio stations was broadcast.

Albrook Field, Panama Canal Zone, was the scene on April 2nd of the largest review in the history of the Panama Canal Department. Approximately 11,000 troops, all available motor transportation and airplanes were utilized. The review was received by Hon. Harry H. Woodring, then Assistant Secretary of War, at that time in Panama making an extensive inspection of the Canal Zone and its installations. In the aerial review were the new B-10 Bombers which on the preceding day, led by Lieut. Colonel Charles B. Oldfield, had completed the ferry flight from Langley Field, Va. to France Field, Panama Canal Zone.

On April 24th, nine Pursuit and nine Bombardment planes from Kelly Field, Texas, were flown on a training maneuver involving the interception of Bombing planes by a Pursuit formation. This maneuver was held at the same time a four-mile long "Battle of Flowers" parade, in commemoration of the 100th anniversary of the battle of San Jacinto, began to weave through the streets of San Antonio.

The San Francisco Bay Region Junior Birdmen of America visited Hamilton Field, Calif., on May 24th. The youngsters brought along a sundry collection of model airplanes which they flight-tested at the field. For the benefit of the young visitors, the various squadrons at the field demonstrated tactical and training maneuvers.

Airplanes of the Third Wing, Barksdale Field, comprising 19 Pursuit and 17 Attack, were flown on June 6th to Dallas, Texas, where an aerial exhibition was staged at the official opening of the Texas Centennial Exposition.

Six A-8 Attack planes from the 37th Attack Squadron, Langley Field, Va., were employed in an attack demonstration at Edgewood Arsenal, Md., for the graduating classes of the Chemical Warfare School. The 37th also gave a demonstration of ground strafing before students of the Army War College, Washington, D.C.

Langley Field airmen riddled "enemy" targets on Plum Tree Island bombing range in an uncanny exhibition of marksmanship which captured the imagination of 120 graduates of the Army War College 1935-1936 Class, and a hundred or so spectators lining the beach. Forty-three airplanes (19 Bombardment, 18 Pursuit and 6 Attack) took part in the big aerial show. For a little over an hour the airmen gave exhibitions of formation flying, long-range gunnery, tow-target gunnery, machine gun attacks on a water target and bombing from high altitudes.

The Second Bombardment Group, Langley Field, Va., staged the largest bombing demonstration in the history of the Air Corps, when 18 B-10B airplanes, each carrying six 100-pound demolition bombs, one half of them instantaneous fuzes and the remainder delay fuzes, made an attack on a target and dropped all bombs at one time on a signal from the leader. Immediately following the 18 planes, three B-10B's, each carrying three 300-pound demolition bombs, bombed the same target in salvo.

Scott Field, Belleville, Ill., was the scene of a Field Day on Flag Day, June 14th, the field being turned over to the Sons of the American Legion of Illinois and Missouri. Various athletic events, competitions between drill teams and bugle corps, flying of model airplanes, and a demonstration by 12 P-26 Pursuit planes from Selfridge Field, Mich., were the outstanding features of the day. Approximately

25,000 people were present at the field.

A daily feature at the National Air Races at Los Angeles, Calif., Sept. 4th to 7th, was a demonstration by a squadron of A-17 Attack planes from March and Barksdale Fields of various types of attack and show formations. Eighteen pilots took part in the swooping low maneuvers and novelty formations depicting the letters "L" and "A" which passed over the sky-turned faces of consistently record-breaking crowds of spectators. The Races proved to be the greatest held since their inception, attracting a daily attendance of approximately 80,000, or 320,000 for the four days.

The 90th Attack Squadron, Barksdale Field, La., dispatched on June 17th a flight of three A-12 planes to Maxwell Field, Ala., from which place they operated in an attack on ground troops in the vicinity of Fort Benning, Ga., using machine guns (simulated) and mustard gas (actual lime water sprayed from two 18-gallon tanks in each airplane).

An aerial demonstration at Fort Benning, Ga., for the benefit of the senior class of the U.S. Military Academy was participated in by the 20th Bombardment and 37th Attack Squadrons from Langley Field, Va., and the 13th Attack and 79th Pursuit Squadrons from Barksdale Field, La.

Brigadier General Halstead, Pacific Sector Commander, and Brigadier General George E. Brett, 19th Wing Commander, witnessed an aerial review at Albrook Field, Panama Canal Zone, on August 29th. The entire Pursuit strength of the Isthmus, plus O-19 planes of the 44th Observation Squadron, participated.

The air demonstration given by the GHQ Air Force at Fort Leavenworth, Kansas, on September 25th, under the direction of Brig. General H.C. Pratt, Commander of the 2nd Wing, was witnessed by approximately 10,000 spectators. The participating organizations were the 49th Bombardment, 17th Pursuit and 90th Attack Squadrons, from Langley, Selfridge and Barksdale Fields, respectively.

About 2,000 Kiwanians from the California-Nevada District visited March Field, Calif., October 8th, and witnessed a demonstration of air maneuvers, parachute bomb dropping, ground strafing, etc.

On the afternoon of October 17th, the First Pursuit Group, Selfridge Field, Mich., conducted the 12th running of the Mitchell Trophy Race. Unfavorable weather kept the attendance down to approximately 20,000 spectators. The winner of the Race, 1st Lieut. John M. Sterling, Air Corps, attained an average speed of 217.546 miles per hour, breaking all previous speed records for this event. A number of other racing events were held during the afternoon, also acrobatic competitions, an attack demonstration, balloon bursting by two P-26 planes, formation flying, etc.

Nine Martin Bombers of the 19th Bombardment Group, March Field, Calif., on November 14th, swooped over a target in the Great Salt Lake, Utah, in one of the most spectacular demonstrations of modern Army bombing technique ever seen in the far west.

The Headquarters of the GHQ Air Force, Langley Field, Va., was represented at the All American Air Maneuvers at Miami, Fla., in December, by a delegation of four Langley Field officers, who flew to Miami to act as observers at the Meet.

FLYING MISSIONS OF MERCY

The 49th Bombardment Squadron, Langley Field, on February 10th and 11th, dropped packages of food to the inhabitants of Tangier and Smith Islands who were facing starvation due to heavy ice floes in Chesapeake Bay which prevented any assistance from reaching them by water. Five trips were made and a total of approximately 5,000 pounds of food was dropped.

During the flood in the State of Pennsylvania in March, the 2nd Bombardment Group, Langley Field, performed relief missions by dropping food and other supplies to isolated communities.

Rescue missions were performed by Selfridge Field pilots on May 27th and 28th in an attempt to locate on Lake St. Clair boating parties reported missing. Two boats were sighted, one overturned with a lone survivor clinging to it, and the other boat traveling in circles at full throttle with no one aboard. The nearest shore station was radioed the location of the overturned craft and a boat was sent out to the rescue.

Two mercy flights were made on July 15th in the Transport C-15 hospital ship from Kelly Field, Texas. After picking up at Dallas, Tex., a Field Artillery soldier stricken with appendicitis and transporting him to the Fort Sam Houston Hospital, this plane later that day was flown to Alice, Texas, where a CCC youth, severely injured in an auto truck accident, was picked up and also transported to the Fort Sam Houston hospital.

Planes of the 18th Pursuit Group, Wheeler Field, T.H., transported two appendicitis cases from the Kilauea Military Camp on Hawaii to the Tripler General Hospital. On August 23rd, during the Hawaiian National Guard encampment, an A-12 Attack plane was dispatched with life jackets in the endeavor to rescue three men who were washed out to sea by the current. Two of the men reached the shore safely, but the third drowned before the plane reached the scene.

Colonel N.W. Campanole, Military Attache to Central America, stationed at San Jose, Costa Rica, required an immediate operation. Good hospital facilities being in Panama, a Bellanca Transport plane was flown to San Jose and the patient was transported to the Gorgas Hospital where a successful operation was performed.

During the last typhoon in the Philippines, a motorized battery of Field Artillery was marooned on a sand bar in the middle of the Bamban River when half way across. A sudden rise of water prevented progress in any direction, and in their two days' isolation two pilots of the 3rd Pursuit Squadron, Clark Field, P.I., made several flights to the sand bar and dropped food and medical supplies to the Artillerymen.

AERIAL PHOTOGRAPHY

The 21st Photo Section, Scott Field, Ill., delivered to the Fort Riley Cavalry School copies of a large mosaic covering 560 square miles of territory in the Fort Riley region. Many weeks were spent by the personnel of this organization in assembling this large photographic mosaic.

Master Sergeant Joe M. Cates, 8th Photo Sec., Mitchel Field, N.Y., established what is believed to be a record in aerial photography when he secured 530 vertical aerial photographs in an hour and 28 minutes during a cooperative photographic mission along the New Jersey coast line for the Beach Erosion Board. Captain P.T. Cullen piloted the plane.

Of two photographic missions in the Puget Sound area assigned to the 15th Photo Section of Crissy Field,,Calif., one in cooperation with the 20th Engineers was a large mapping project covering ten 15-minute quadrangles and tying together several projects which had been completed in the past. The other project was the laying of a tactical map over an area adjacent to Fort Lewis, Wash., embracing 36,000 square miles.

On July 3rd, Lieut. Charles Densford and Staff Sgt. Coy, of Kelly Field, took 50 exposures of Texas floods for Congressional use.

During the Second Army Maneuvers in the Allegan County, Mich., area in August, the 21st Photo Section, Scott Field, Ill., made photographic records of all troop movements, mosaic maps, and performed all other necessary work. On 22 flight missions, covering 41:15 hours' flying time, 829 negatives were made, from which 2731 prints were taken. Fifteen small mosaics were assembled for the use of umpires assigned to these maneuvers. Photographs were made with excellent results under all conditions, including complete overcast sky and heavy haze. Vertical photographs were made at altitudes from 8,000 to 12,000 feet with both clear and overcast sky. Oblique photographs were made from 2,000 to 3,500 feet on clear days, and at 1,000 feet and lower when the ceiling was low. Lieut. Kurt M. Landon and Master Sergeant N.K. Loupos photographed 400 square miles in the Allegan County area.

The 2nd Photo Section, Langley Field, made a photographic mosaic of Fort Meade, Md.,covering 36 square miles, for lithographic reproduction.

The Photographic Section at Bolling Field, D.C., completed an aerial mosaic map of the District of Columbia and vicinity. Assembled in the form of a circle, it included all the territory within a radius of 18 miles from the Post Office building. This unit also photographed the Susquehanna River basin for use in flood control developments.

Proceeding to Northern New Mexico, a pilot and photographer of the 1st Photo Section,Kelly Field, took aerial photographs of the progress of the Conchos Dam on the North Canadian River, also the terrain in that vicinity. Approximately eight square miles were covered by 43 vertical photographs. Sixty-two oblique photographs were also taken.

CHANGES OF STATION

The 91st Observation Squadron and the 15th Photo Section, occupants of Crissy Field, Presidio of San Francisco, Calif., since the establishment of that field in 1919, were in June transferred to their new home at Fort Lewis, Washington, over 900 miles from San Francisco.

FLOODS AND STORMS

Flood waters of the Potomac River completely inundated Bolling Field, D.C., necessitating the evacuation of the field on March 18th, the removal of all Air Corps equipment, and the abandonment of officers and noncommissioned officers' quarters on the field. It was not until the morning of March 21st that the water receded enough to permit the troops to return to the field and begin the work of cleaning up buildings which had been flooded.

The Air Corps bombing and gunnery range at Valparaiso, Fla., was visited by a violent hurricane on the night of July 30-31. The strenuous efforts of Air Corps personnel in bracing certain buildings, removing fallen trees and electrical wiring aided materially in reducing to a minimum the damage caused by the storm. Civilians camping in dangerous localities were rescued and brought to places of safety.

MISCELLANEOUS ITEMS

A new non-stop distance record for amphibian planes was made by Major General Frank M. Andrews, Commanding General of the GHQ Air Force, on June 29th. He was accompanied by Major General Frank R. McCoy, Second Corps Area Commander; Major John F. Whiteley, co-pilot; 1st Lieuts. Hugh F. McCaffery and Joseph A. Miller, navigators, Corporal John McKenna, Privates Ralph A. Minor and Charles J. Archer. Flying in the Douglas OA-5, the distance of 1425 miles from San Juan, Porto Rico, to Langley Field, Va., was covered in 11 hours and 9 minutes.

Of the total of 117 world's aeronautical records, listed by the Bulletin of the Federation Aeronautique Internationale as of January 1, 1936, France was credited with 37 of these records; the United States with 36; Italy, 27; Germany and Poland, 8 each; and Great Britain, 1. On July 1, 1936, American aviators, with 49 world's records to their credit, led all other nations in this respect.

The aeronautical display of the Army Air Corps at the Great Lakes Exposition at Cleveland, Ohio, was made up of specially selected items representing the very latest as well as some of the earliest types of equipment used by the Air Corps.

During the period between July 24th and August 27th, Major General Oscar Westover, Chief of the Air Corps, made a tour of inspection which embraced practically every Air Corps station within the continental limits of the United States. He also visited and inspected some of the foremost aircraft factories in the United States.

Memory of an Army flyer who was killed at Fort Worth, Texas, 18 years ago, was honored at March Field, Calif., on August 9th, when a bronze plaque, dedicated to Lieut. Peyton C. March, Jr., was unveiled at the San Diego highway entrance to March Field amidst appropriate but simple ceremonies. About 400 civilians and 1300 soldiers attended the ceremony.

The annual Engineering and Supply Conference was held at the Materiel Division, Wright Field, Ohio, October 5th to 9th, and was attended by a representative group of officers whose duties are connected with engineering and supply matters relating to the Air Corps.

RESERVE TRAINING

Twenty-one Reserve officers reported at Langley Field on July 19th for two weeks' active duty, 17 being assigned to the 20th Bombardment Squadron and 4 to the 8th Pursuit Group.

On July 19th, 53 Air Reserve officers began a two-week period of active duty at Long Beach, Calif.

The period from August 2nd to 15th at the Municipal Airport, Oakland, Calif., was devoted to training of 12 Reserve officers from the 316th Observation Squadron and 4 Reserve officers from the 381st Service Squadron, attached. From August 16th to 29th, training was conducted for 11 Reserve officers from the 367th Observation Squadron and 4 Reserve officers attached.

The Air Corps Reserve of the 7th Corps Area completed two excellent summer training camps, both at Camp Ripley, Minn., the first from August 23rd to September 5th, and the second from September 6th to 19th. Over 751 hours were flown during the two training camps.

LONG DISTANCE FLIGHTS

The largest mass flight of U.S. Army planes made to a possession beyond the continental limits of this country was completed on February 28th, with the arrival in the Panama Canal Zone of 13 P-12 and 11 B-6 airplanes. These planes, used by Air Corps organizations at Langley Field, and transferred to Panama to replace unserviceable aircraft, were ferried by Air Corps pilots on duty in the Panama Canal Department. Leaving Langley Field on February 11th, the flight proceeded via Atlanta, Ga., to the San Antonio Air Depot for mechanical check-up of the planes. Taking off from San Antonio on February 21st, the flight proceeded to destination via Brownsville, Texas; Tampico and Vera Cruz, Mexico; Guatemala City, Guatemala; Managua, Nicaragua, and San Jose, Costa Rica. Lieut. Colonel Charles T. Phillips was flight leader of the Pursuit contingent and Lieut. Colonel Junius H. Houghton of the Bombardment.

Piloting three new PB-2A planes, Lieut. Col. Ralph Royce, Major Alfred E. Kessler and Capt. Robert C. Oliver flew from the plant of the Consolidated Aircraft Co., San Diego, Calif., to Selfridge Field in 13 hours and 10 minutes of actual flying time.

Major Ira C. Eaker, Air Corps, piloting a single-seater Pursuit plane, landed at Los Angeles, Calif., on June 7th, following a flight started June 3rd from Mitchel Field, N.Y., during which he relied solely on the instruments in the plane to guide him to his destination. Owing to the limited gasoline supply of the small Pursuit plane, the flight was made in easy stages. Major W.E. Kepner, in another Pursuit plane, served as a convoy to avert any mishaps.

Three airplanes of the 2nd Observation Squadron, Nichols Field, P.I., were flown on a 450-mile mission, during which landings were made on several islands of the Philippine Archipelago.

Several extended cross-country flights in formation were performed by the 20th Pursuit Group during June. Fourteen planes of the 55th Squadron were flown to Little Falls, Minn., on June 19th; 12 planes of the 79th Squadron to Denver, Colo., on June 27th, and 12 planes of the 77th Squadron to Dayton, Ohio, June 28th.

In 7 hours and 45 minutes, five Northrop Attack planes from March Field, Calif., completed a flight to Kelly Field on August 21st in what was purported to be the longest military non-stop formation flight on record. The flight was designed to test the gas and oil consumption of the new Attack planes assigned to the 73rd Attack Squadron. An average speed of 148.2 miles per hour was reported for the trip.

A flight of eight A-17 Attack planes from Barksdale Field departed on September 1st to participate in the National Air Races at Los Angeles, Calif. Stops were made at Midland and El Paso, Texas, enroute. The total flying time of the flight at the Races was 71 hours and 5 minutes.

On November 15th, the 21st Reconnaissance Squadron, Langley Field, Va., completed a most interesting and instructive flight in a Douglas OA-5 plane, to Panama. Only 456 of the total distance of 3890 miles was over land. Miami, Fla., was the only intermediate stop both ways.

Testing long non-stop flights through the sub-stratosphere, ten speedy Pursuit planes from Barksdale Field landed at Kelly Field on December 12th, after a 360-mile aerial journey which required 2 hours and 15 minutes.

Five B-10B planes of the 7th Observation Squadron, France Field, Panama, took off on December 14th on a good will flight to Bogota, Colombia. A stop was made at Medellin, Colombia, 416 miles from Panama, where the planes were refueled and the flight personnel were greeted by high officials of the town. At Bogota the flight was welcomed and entertained by high officials of the Colombian government. Starting on the return flight on December 17th, the flight personnel remained overnight at Cali, Colombia, where the primary military and flying school is located, and left on the morning of the 18th for a direct flight of 365 miles to France Field, which was accomplished in 2 hours and 20 minutes.

A ferry flight of three planes (a Bellanca C-27 and 2 Douglas Amphibians) with Brigadier General George H. Brett in command, arrived in Panama on December 20th. The flight took off from Randolph Field, Texas, on December 17th, and made stops at Minatitlan, Tampico and Vera Cruz, Mexico; Guatemala City, Guatemala; San Jose, Costa Rica, and Managua, Nicaragua.

The Third Pursuit Squadron, Clark Field, P.I., completed a cross-country flight to the Southern Islands of Leyte, Cebu, Bohol, Mindanao, Jolo, Masbate, Negros, Mindoro and Panay. Approximately 25 landing fields were visited during the 5-day trip, and all were found generally to be in good condition.

ALTITUDE FLIGHTS

Individual and formation altitude performance flights were accomplished by the 35th Pursuit Squadron, Langley Field, January 20-26. Formations were operated above 20,000 feet to familiarize pilots with high altitude conditions and the use of oxygen equipment.

Flights for the purpose of recording measurements of cosmic ray intensities were made at Bolling Field, D.C., December 21st and 22nd, in a C-8 photographic plane, observations being conducted at altitudes of 10,000, 15,000 and 20,000 feet.

Lieut. W.R. Robertson, 33rd Pursuit Squadron, Langley Field, Va., flew a PB-2A airplane up to 39,200 feet and remained at that altitude for approximately 20 minutes. At this altitude the controls froze and the pilot had to throttle back to lose altitude and return to a warmer layer.

MISCELLANEOUS FLIGHTS

Sixteen officers from the 1st Pursuit Group, Selfridge Field, ferried to their home station P-26C Pursuit airplanes manufactured by the Boeing Aircraft Co., Seattle, Wash.

In a flight on July 7th to test a blind flying hood, designed by the 19th Bombardment Group and adopted to the B-10 plane, Col. C.L. Tinker, in a hooded cockpit of a B-10B, flew from Hamilton to March Field and return, relying solely on the instruments in his plane. Approximately four hours were spent under the hood and 600 miles covered.

A Douglas C-33 Transport plane, piloted by Privates Treweek and Davis, was flown from Patterson Field, Ohio, to Bolling Field, D.C., in an hour and 40 minutes, or at an average speed of nearly 240 miles per hour. This constituted a record run between these two fields.

During July, Flight A, 1st Transport Squadron, Patterson Field, in a total of 17 freight trips, flew 12,655 miles and carried freight aggregating 42,377 pounds.

On September 17th, 19 airplanes from Langley Field were flown to and temporarily housed at the Middletown Air Depot, this being occasioned by the arrival of a hurricane off the Virginia Capes which threatened to flood Langley Field.

A Douglas twin-engined airplane, equipped as a flying laboratory to conduct extended tests on a combination of celestial and dead reckoning navigation equipment, landed at Brownsville, Texas, Sept. 24th, completing a trip across the Gulf of Mexico from New Orleans, La.

NEW CONSTRUCTION

The landing mat at Moffett Field, Calif., was extended 500 feet, making the total length of same 2,000 feet.

Work started on April 1st on a new concrete apron, approximately 1,000 feet long by 100 feet wide, and from 6 to 8 inches thick, for the airplane hangars at Scott Field, Ill. This project included a concrete drain along the landing field side and three wash racks and a number of gasoline refueling boxes.

New airdrome equipment was installed at Brooks Field, Texas, including a tower for a remotely controlled wind indicator in front of the transient hangar, a bank of B-9 floodlights at the northeast end and one at the west end of the field.

The landing mat at Luke Field, T.H., was lengthened by 500 feet and widened by 100 feet, increasing its size to 3,000 by 400 feet.

Ground was broken on September 8th for the construction of Sacramento's new $7,000,000 air repair depot. While four Air Corps Squadrons soared over the site, near Ben Ali, Hon. Frank M. Merriam, Governor of California, in the presence of approximately 15,000 spectators, pushed down on a plunger which set off a blast of dynamite as the signal for work to start. When the project is completed, this site will house the Army's repair center for planes on the Pacific Coast, Hawaii and the Philippines.

A control tower to regulate air traffic arriving at or departing from Mitchel Field, N.Y., was placed in operation there on November 10th, with operating personnel maintaining continuous 24-hour watch with radio receivers tuned to four different frequencies.

The night lighting system at Kelly Field, Texas, was augmented by the installation of three Type 9-A floodlights. There was also installed a new T which has automatic wind control settings, and a new system of signal lights for night flying control.

SCHOOL ACTIVITIES

During the calendar year 1936, a total of 83 officers and 281 Flying Cadets commenced training at the Air Corps Primary Flying School at Randolph Field, Texas. The March, 1936, class, the smallest one entering the Air Corps Training Center for quite a number of years, comprised 7 officers and 61 Flying Cadets; the July class, 15 officers and 117 Flying Cadets, and the October class, 61 officers (all graduates of the June, 1936, class of the U.S. Military Academy) and 103 Flying Cadets.

A total of 196 students graduated from the Air Corps Advanced Flying School, Kelly Field, Texas, during 1936. The February graduating class comprised 5 officers of the Regular Army, 2 foreign officers and 45 Flying Cadets; the June class, 9 officers and 52 Flying Cadets, and the October class, 34 officers of the Regular Army, one officer of the Philippine Constabulary and 48 Flying Cadets.

Ten Air Corps officers were assigned as students in the 1936-37 class of the Army War College, and nine in the 1936-1937 class of the Army Industrial College.

Graduation Exercises at the Air Corps Tactical School, Maxwell Field, Ala., were held on June 2, 1936, the graduating class comprising 66 Air Corps officers, one Navy officer and three Marine Corps officers.

Six pilots of the 1st Pursuit Group, Selfridge Field, departed on June 13th in PB-2A planes for Mitchel Field, N.Y., for duty in connection with aerial experience instruction of West Point cadets.

The 7th Bombardment Group, Hamilton Field, started a navigation school on July 6th.

The 2nd Bombardment Group, Langley Field, Va., departed on June 15th for Mitchel Field, where for three weeks intensive flying was conducted in connection with the aerial experience of the first class from the U.S. Military Academy.

Sixty-one members of the class of 276 Cadets who graduated from the U.S. Military Academy on June 12, 1936, were attached to the Air Corps for flying training.

Commencement exercises of the 1936 class of the Air Corps Engineering School at Wright Field were held on July 31st in the Materiel Division Auditorium. Brigadier General A.W. Robins, Chief of the Materiel Division, addressed the graduates and awarded them their diplomas. Ten Air Corps officers comprising the 1937 Engineering class, reported for duty in August.

Instruction in the operation and maintenance of automatic pilots was started on July 15th in the Equipment Branch, Materiel Division, with representatives from the Fairfield and Middletown Air Depots, Chanute and Wright Fields in attendance.

From October 19th to 31st, graduates of the Armorers class of the Air Corps Technical School, Chanute Field, Ill., participated in field exercises at the gunnery camp at Valparaiso, Fla. and were given practical instruction in loading and fuzing of demolition, practice and fragmentation bombs under actual service conditions.

Five medical officers of the Regular Army graduated on Nov. 14, 1936, after a four months' basic course of instruction at the School of Aviation Medicine at Randolph Field, Texas.

Four student navigators completed the ground school course in Celestial Navigation in the 88th Reconnaissance Squadron, Hamilton Field, Calif., on October 9th.

Students of the 18th Composite Wing Communications School, Luke Field, T.H., engaged in field maneuvers for four days, the class being divided into six teams, each one operating a field radio set.

COOPERATION WITH CIVIL ACTIVITIES

Utilizing four planes from the 23rd Bombardment Squadron, Luke Field, T.H., seeds of the white Hawaiian mahogany tree were dropped over eroded areas on the Island of Oahu on January 20th and 23rd. Mr. G.S. Judd, Territorial Forester, furnished 2,000 pounds of seeds which were divided among the four planes. Sowing seeds in this manner in the past produced excellent results.

The 72nd Bombardment Squadron, Luke Field, T.H., aided the National Park Service of Hawaii by sowing Koa seed over the northern half of the Waianae mountain range from Bombing planes.

From July 1, 1934, to June 30, 1936, Scott Field officers and enlisted men made a total of 588 "weather hops" for the U.S. Weather Bureau.

With forest fires in upper Michigan assuming serious proportions, PB-2 planes from Selfridge Field, with Federal officials as observers, were used to survey the situation in order to map out defensive measures.

Flying three B-12A planes of the 4th Observation Squadron, Luke Field, T.H., a reconnaissance of the slopes of Mauna Kea was made on October 6th to determine the localities where the majority of wild sheep were collected and to estimate their number, in order to enable the Hawaiian Forestry Service to conduct periodic round-ups. The wild sheep had been causing great destruction to the young struggling timber growth, resulting in increasing erosion.

An Army Bombing plane in Hawaii was put to a rather unique use on October 19th. Instead of bombs, there were carried six 100-pound coils of wire with which to build a long fence on the southeast side of Mauna Loa to prevent the encroachment of wild sheep and goats into the ranch lands below. The project of transporting the wire fencing was accomplished in two hours. Any other method of transportation would have required at least two days.

REORGANIZATION OF AIR CORPS UNITS

On August 12, 1936, the War Department issued instructions governing the reorganization of the Army Air Corps within the continental limits of the United States incident to the reorganization of the GHQ Air Force. Activities placed under the jurisdiction of the Chief of the Air Corps are the Office of the Chief of the Air Corps, Washington, D.C.; the Materiel Division, Wright Field, Ohio; the Air Corps Technical School, Chanute Field, Ill.; the Air Corps Tactical School, Maxwell Field, Ala.; the Air Corps Training Center, and Bolling Field, D.C.

Under the GHQ Air Force organization, various units were reorganized and redesignated, and new organizations constituted from the station complements which were abolished. Nine Base Headquarters and Air Base Squadrons were created, one each at Langley, Mitchel, Selfridge, Hamilton, March, Barksdale, Scott, Brooks and Moffett Fields. Service squadrons were discontinued, the personnel thereof being transferred to Headquarters and Headquarters Squadrons and other units. Most of the Observation Squadrons were redesignated as Reconnaissance Squadrons. Seven squadrons stationed at four Air Corps stations (Chanute, Kelly, Maxwell and Bolling Fields) were rendered inactive, five of them being assigned to the GHQ Air Force and two to Corps Areas.

The Headquarters and Headquarters Squadron of the 2nd Bombardment Group, Langley Field, Va., came into being on September 1, 1936, with 14 officers and 78 enlisted men.

The 21st Reconnaissance Squadron, GHQ Air Force, was reconstituted at Langley Field on September 1st, with two officers and 19 enlisted men.

A new Reserve unit, the 328th Observation Squadron, composed of San Antonio Air Reserve officers, was organized, with Lieut. Colonel Jack H. Lapham in command.

LIGHTER-THAN-AIR ACTIVITIES

The TC-13 airship at Moffett Field, Calif., completed two test flights, the first being a harbor watch mission off San Francisco Bay, operating at the speed of surface craft, which was concluded after 77 hours of flight. The second test was conducted at a cruising speed of 65 miles per hour, a distance of 1855 miles being logged while cruising off shore up and down the California seacoast.

Moffett Field, Calif., transferred to the War Department by the Navy Department, started functioning as an Air Corps station during the latter part of January, 1936. The 19th Airship Squadron, transferred to this station from Langley Field, resumed its tactical training on February 1st.

During the celebration of the second birthday of the Junior Birdmen of America in May, a talk was broadcast from the TC-13 airship at Moffett Field, and rebroadcast by Station KYA of San

Francisco. The organization of Moffett Field was described over the air by Major Burdette Palmer, Air Reserve, Field Director of the Junior Birdmen, while Major Clarence B.Lober, Commanding Officer of the 19th Airship Squadron, explained the construction and operation of the TC-13 airship.

During August, the 1st Balloon Company, Fort Sill, Okla., engaged in the Second Army Maneuvers at Camp Custer, Mich.

The 21st Airship Group, Scott Field, Ill., consisting of the 21st Airship Group Headquarters Detachment and the 9th Airship Squadron, conducted maneuvers from September 15th to 29th in the vicinity of Springfield, Ill. The maneuvers were confined to living in the field and carrying out airship operations without the usual airdrome facilities.

Ed. Note: The review of the activities of the Materiel Division of the Air Corps for the calendar year 1936 will appear as the leading article in the next issue of the News Letter.

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THE NEW CLASS AT THE ADVANCED FLYING SCHOOL

Ten Army officers, a lieutenant of the Mexican Navy, 55 Flying Cadets, one of whom is a member of the Philippine Constabulary, comprise the new class at the Advanced Flying School, Kelly Field, Texas. An additional member of the class is Flying Cadet Henry D. Bastin, who was held over from the previous class, due to a prolonged absence as a result of an injury received in a basketball contest.

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77th PURSUIT TAKES PRIDE IN SQUADRON HISTORY

The 77th Pursuit Squadron, 20th Pursuit Group, Barksdale Field, La., has in its possession one of the finest organization histories that can be found throughout the Army in any of its branches. First begun by Lieut. Richards in November, 1930, it has been faithfully upheld by monthly entries ever since. To date there is nothing missing - every individual who has belonged to the Squadron, every maneuver, special flights, etc., is entered. Major Richards, now commanding the 62nd Squadron at San Antonio, Texas, recently delegated Lieut. Vance to fly to Barksdale Field for pertinent information regarding squadron histories in order that he might initiate and maintain one in his new organization. "When a man makes a better mouse trap than his neighbor (or keeps a better squadron history) the world (or Army) will beat a path to his door." The News Letter Correspondent invites 1st Sergeant Rowen to take a bow.

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STUDY OF NAVIGATION BY HAMILTON FIELD SQUADRONS

At present, Navigation is the key word of the 31st Bombardment Squadron at Hamilton Field, Calif. This Squadron has been concentrating upon the theory of Dead Reckoning Navigation, and it is expected that very shortly all officers of this Squadron will have completed the theory and the class room problems. It is the desire to coordinate the theory of Dead Reckoning Navigation with the actual flying of typical problems soon after the principles have been explained and illustrated in the class room. Due to poor flying weather, it has not been altogether possible to accomplish this. In the near future, however, all officers and cadets will have completed both the class and flying problems.

For the past few weeks the 11th Bombardment Squadron, Hamilton Field, has been conducting a school in Navigation and Meteorology. This class is composed of fourteen officers and three cadets. These classes have been meeting in the mornings, the afternoons being utilized in Navigation missions and air speed calibration flights. Some night flying has been conducted, but due to the generally cold and inclement weather no great amount was done.

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CHINESE FLYER VISITS KELLY FIELD

Captain Luther Yuen Peh Chang, formerly Chief of the Pursuit Section of the Chinese Central Aviation School of Hangchow, China, visited Kelly Field recently. Speaking of this school, the visitor stated that it is patterned after and termed "The Kelly Field of China."

Captain Chang, a former member of the Chinese air forces, said he knew several former Air Corps officers who were comrades of officers now stationed at Kelly Field, and discovered that General Wen, one of China's military leaders, was a classmate of Colonel Arnold N. Krogstad, now Commandant of Kelly Field, in 1909 in the U.S. Military Academy at West Point.

The Chinese Aviation School was established in 1931 by Colonel "Jack" Jouett, former commander of the Third Attack Group when it was stationed at Fort Crockett, Galveston, Texas. Colonel Jouett resigned from the Army to take over the task of establishing this school, which accounts for the American method of training employed there. Captain Chang said that the methods used at Kelly Field in flying training were not new to him, as practically the same ones are used at his school. He expressed interest in some of the new developments in flying instruments at Kelly Field and was especially interested in Pursuit flying training methods. He was escorted over the field by Lieut. M.F. Stalder, instructor in the Pursuit Section at Kelly Field.

The Chinese flyer arrived at San Antonio by rail from the east coast, where he had visited several airplane factories and Air Corps stations. He left by plane for the west coast and will leave the United States via the China Clipper for the Philippine Islands, after conferring with members of the crew of the giant plane on operation methods.

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During January, the Middletown Air Depot completed the major overhaul of 10 airplanes and 51 engines. Minor repairs were made on 32 airplanes and 16 engines, these including the installation of oil dilution systems on 6 airplanes and radio compasses on 26 airplanes.

GRADUATION EXERCISES AT KELLY FIELD

Three officers and 30 flying cadets were graduated from the Air Corps Training Center on Feb. 17, 1937. The usual aerial review was held at 9:30 AM at Kelly Field, the reviewing officers being Maj.General C.V.Birkhead, commanding the 36th Division, Texas Nat.Guard, and Brig. General James E. Chaney, commanding the Air Corps Training Center. This was followed by the graduation exercises in the Kelly Field Theatre at 10:45 AM. General Chaney introduced the speaker, General Birkhead, with the following remarks:

The Army of the United States consists of the Regular Army, the National Guard, and the Organized Reserves. Today our Regular Army consists of 12,000 officers and 150,000 enlisted men. Our National Guard consists of 13,500 officers and 175,000 enlisted men. The Organized Reserves consist of 96,000 officers eligible for active duty assignment in an emergency. It will thus be seen that the National Guard is numerically the strongest of the Army's components. From the point of view of the states, the National Guard is maintained to insure domestic tranquility. However, from a national viewpoint, its mission is the early and effective reenforcement of the Regular Army in an emergency. It is organized in 18 Infantry Divisions, 4 Cavalry Divisions, and certain elements of Corps and Army troops, among which are 19 squadrons of Observation Aviation. In recent years the National Guard has made tremendous strides in preparing itself to carry out its role in national defense and its present recognized high standard of efficiency is in large part due to the patriotism, enthusiasm, and hard work of its personnel - especially its officer personnel. Today we have the honor of having with us the commander of one of our National Guard Divisions, a man who has distinguished himself both in war and in peace, as a soldier and as a citizen. I take great pleasure in presenting to you Major General Claude V. Birkhead, commanding the 36th Division, Texas National Guard."

Extracts from General Birkhead's address are quoted below, as follows:

"I appreciate the honor of being invited here to address this graduating class and to see this review. I have enjoyed every minute of it and my heart swelled a little more, has beat a little more rapidly in the contemplation of my fellow citizens who, like this and the succeeding classes and those that have gone before, dedicate themselves to this training for the purpose of our national defense. I don't think there is anything finer than the young man who looks forward to the possibility that his country might need his services and who, realizing that possibility (and may God grant that it is but a possibility), prepares himself to deliver to the utmost the service that his God-given abilities have qualified him for. I say possibility; I pray God that this country may never engage in another war, either offensive or defensive, but I believe that the best chance of avoiding another war for our country is just what Washington said about it, what Lincoln said about it, what every great man who has studied the question and thought about it, with a realization of what human nature is and has always been. And that is that our best assurance against war is a complete and thorough preparation for it if it should come.

There seem to be rumblings. There may be some reason why our government moves their store of treasure from the seacoast on the East, which, by study and trial and maneuver is believed to be vulnerable to possible air attacks and other attacks; but I hope that that reason is but a possibility that war might some time come. We, I believe, have a great national defense system. It is a democratic defense system. It is (since our defense as represented by the two great oceans on our borders is rapidly disappearing), first our Navy and our coast defenses, then our Regular Army, which is entirely too small. But it is so highly efficient now that, small though it is, those of you who remember the days of 1917 will see an entirely different situation if that Army is ever again called on to function. I believe the American army today is the most efficient army in the world.

Next comes the National Guard system, which can rapidly be expanded to two, to three, to four times its present organization of 175,000 men and 13,500 officers. The National Guard constitutes the first line of defense in any major emergency. The Regular Army being so small will be absorbed in handling and supervision and organization of the armies represented by the National Guards and the selective service. That is something that should not be the case. I remember in 1919 when, taking lessons from the world war, thoughtful men both in and out of the Army, thinking about national defense, began to try to make an organization that would avoid the mistakes and errors that were upon us in the world war and figure out a system. And our present system, as represented by the National Defense Act of 1920, superimposed upon the former National Defense Act, expresses that system. At that time there were many thoughts about the organization and all over the country the opinion of those who had participated, [illegible], and those who had not participated directly, was sought; and the present system built upon it.

It is not large enough. The Regular Army should be doubled in size. The National Guard should be doubled in size, and every effort should be made to not only have 96,000 officers in the Reserve but to maintain double that amount. I don't believe in this parity business. I don't believe in parity with anybody, with our Navy or with our Army. I don't believe in this idea that America should have a Navy second to none. I don't believe in this idea that America should have an Army second to none. I don't believe in this idea that America should have an air service second to none. I believe that America, disregarding every other nation of the world, should have a Navy the best of all in the world; an Army best of all in the world; an Air Service best of all in the world. And I want to say to you that, if Americans set their faces that way and demand the best in those three elements required for our national defense, I don't believe this country will ever be involved in another war upon foreign shores; and the possibility of being involved in one upon these shores will also be a remote possibility. Those of you who realize the horrors of war can get the idea of what I mean when I say that my heart swells when I see these young men preparing themselves as a part of that national defense system which - if carried out - will probably prevent us from ever having, or going through the horrors of another war, either foreign or otherwise. I am proud of these young men. I am proud of this country, and I believe that we should drop all this idea of being even-Stephen with anybody in the world - but better than anybody in the world in those respects, as we are in most other respects.

This, I understand, is the smallest class ever graduated from Kelly Field. I don't believe that that is a handicap to this class nor any reflection upon it or previous classes. I have been told that what you lack in quantity you make up in quality. I am told that the standard and standing of this class is far up as compared with the others; that it ranks equally as well as any class that has ever preceded it. I am happy to say that you are going out into the service now to continue the fine traditions of the Air Corps. I am happy to say that I believe, following this, there will be an increasing number of young men to come to this standard, because I feel that America is waking up to the idea along the lines I have just been talking about; that America should have the best. And I believe that the immediately succeding years will see the Air Corps better supported by our government than it has been in the last few years. Of course, there has been an immense improvement in the last four or five years. That improvement is not enough, and it is nothing compared to what it will be in the next few years.

I am told that you gentlemen in this graduating class are excellent flyers, excellent pilots, excellent observers; that there are few, if anything, that you can add in the way of handling ships of the type you have been handling. You are getting a diploma, a certificate, today, but I believe with all of that that you, and each of you, will need to realize that you are like the high school graduate in this air game that moves so fast; so many new things all the time. The next class will have things that you haven't had the benefit of; changing types of planes and auxiliaries of all kinds. In fact, I believe you realize that you are like the high school graduate - that you haven't got an education yet, but you have just got the basis upon which an education can be built.

Talking with one of the senior officers this morning about the graduating class, he said that life in the Army is a continuous graduating class. I have graduated from school after school. Well it is like that in civil life. Each point we reach is simply a basis and a foundation for education, and further education and training along the lines of our vocation or our avocation. So I charge you young men- out of an abundance of experience, out of many years of life -that you are in a place that requires you to continue your education. If you do not, you will be like the high school graduate who stops there - everything else moves on - everyone else adds to his education and does not stand still. If you stand still, you are going back. The new things of today will be old next year and abandoned like many of the planes you are flying today. Next year they will be abandoned.

I charge you to keep up that high purpose in life and continue to make yourself and your service more and more valuable to your country in what I consider now the one arm or branch of the service that is most important- if one can be considered more important than another; if you can say that a catcher is more important than a first baseman; that a pitcher is more important than a catcher. Then I say that you, who are in the most important branch of our service today, keep it up and continue your progress."

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During January, the Engineering Department of the San Antonio Air Depot overhauled 17 planes and 67 engines and repaired 22 planes and 16 engines.

PROMOTION OF NONCOMMISSIONED OFFICERS

A list is given below of Staff Sergeants placed in the order of their standing on the eligible list for promotion to the grade of Technical Sergeant, Air Corps, effective January 1, 1937. This list contains only the first 250 names on the qualified list.

No.	Name	No.	Name	No.	Name
1	Zinkann, Charles*	65	Brocks, Alfred A.	129	Norich, Albert I.
2	Eaton, James H.*	66	Simpson, Walter	130	Smith, Anthony
3	Hayes, Henry G.	67	Malkemus, George D.	131	Aldrich, Guy A.
4	Howard, John	68	Rubby, Louis	132	Moore, John H.
5	Bauer, Joseph	69	Boudreaux, Henry D.	133	Deming, John B.
6	Donnelly, Frank A.	70	Monroy, Phillip D.	134	Worthen, Ray E.
7	Routt, Homer	71	Jernigan, William H.	135	Tuffly, Edward W.
8	Smith, Roscoe O.	72	Tucker, James R.	136	Morris, William C.
9	Pryor, John	73	Fagan, Luther W.	137	Dossett, Elbert
10	Maginness, James A.	74	Willett, Ray R.	138	Boyles, James H.
11	Levesque, Ernest	75	Greene, Robert H.	139	Sarem, Jack
12	Campbell, Walter H.	76	Williams, Leonard	140	Cheatham, Charles W.
13	Toohey, Thomas F.	77	Hurst, Frank	141	Kidd, Harvey O.
14	Birk, Frank J.	78	Paseman, Edwin	142	Fields, Wiley C.
15	Dodd, John C.	79	Darcy, Lawrence J.	143	Winfrey, Oliver A.
16	Silva, Louis T.	80	Steine, David	144	Ward, Walter M.
17	Gessula, Nissim	81	Mehnert, William	145	Hampton, Jack
18	Protivnak, Michael	82	Barker, Arthur C.	146	Senter, Herman F.
19	Passwaters, Francis M.	83	Antrim, Roland H.	147	Washburn, Emory E.
20	Crocker, John S.	84	Kramberg, Joseph	148	Gorman, Andrew J.
21	Balacke, Harry	85	Skelton, Edward F.	149	Benevides, Joseph H.
22	Halsey, Andrew J.	86	Alexander, Houston	150	Froberg, George W.
23	Wildman, Armstead A.	87	Hicks, Harry	151	Eanes, Louis V.
24	Capps, Dwight M.	88	Sloan, Miles B.	152	Jensen, Oluf T.
25	Haga, Fred M.	89	Carter, Lloyd	153	Ross, Delano W.
26	Rice, Robert E.	90	Blesh, Earl S.	154	Wheeless, John A.
27	McGraw, Mathew A.	91	Brucher, Martin	155	Eldridge, Russell
28	Gorges, Anthony J.	92	Bright, Clarence E.	156	Leonard, Dale F.
29	Gilbert, Claude M.	93	Fisher, Elmer H.	157	Hansen, Henry P.
30	Kerr, Raymond	94	Simmons, Joel A.	158	Schultz, Steve J.
31	Hoober, Asa C.	95	Masterson, John A.	159	Chaudron, Norvelle
32	Shaw, Carrell L.	96	Benson, Harold P.	160	Hammack, Robert W.
33	Carr, Edward L.	97	Lazor, Thomas	161	Garduque, Gabriel
34	Joyner, Charles	98	Dearborn, James E.	162	Bathey, George H.
35	Roziburski, Michael M.	99	Nipper, Eli H.	163	Martini, Henry
36	Cheatham, Roy D.	100	Armstrong, Chester A.	164	Kannelt, Harold B.
37	Roeske, Myron	101	McClellan, Edwin J.	165	Yeager, Adolph C.
38	Franklin, Henry L.	102	Whitaker, Gerald G.	166	Carr, George W.
39	Johnson, Karl R.	103	Weltz, William M.	167	Anderson, Chauncey L.
40	Rowen, Halstead J.	104	Dambroso, Tony	168	Criss, Karl W.
41	Sheffield, William K.	105	Marshall, John A.	169	Witwicki, Kazimir M.A.
42	Fuecker, Harry N.	106	Davis, Golden R.	170	Mickey, Everett
43	Vielock, Adam J.	107	Bennett, Paul D.	171	Huffman, Ernest J.
44	Lash, Paul	108	Fredericks, Joseph M.	172	Burton, Jack
45	McConnell, Jessy C.	109	Seguine, Cecil C.	173	Tormey, Thomas P.
46	Oram, George H.	110	Silva, Manuel	174	Fields, Clarence D.
47	Williams, John M.	111	Flower, Abraham	175	MacDermott, William K.
48	Brown, Jacob S.	112	Platt, Graham	176	Schuette, Alfred A.
49	Falls, Clyde L.	113	Brown, Walter D.	177	Weiss, Joseph
50	Gardner, Edgar W.	114	Carlow, Harold F.	178	Riviere, Jean E.
51	Kacziba, Alexander	115	Jones, Thomas A.	179	Reilly, Patrick D.
52	Barlow, Robert L.	116	Kievet, Anthony	180	Chovenitz, Frank J.
53	Moss, Grover C.	117	Henry, William F.	181	Caris, John A.
54	Schantel, August	118	Pruitt, Cecil	182	Hoekstra, Robert
55	Caldwell, James M.	119	Barnhart, Lawrence E.	183	Peterson, Cayus P.
56	Kirby, Louis A.	120	Martin, Morris	184	Ward, Leland S.
57	Langston, Wilbur E.	121	Simpson, Dewey H.	185	Weeks, Alvin C.
58	Chuturich, Michael	122	Hoppe, Helmar B.	186	Jolly, Arthur
59	Gorin, Maurice	123	Barkhurst, Frank M.	187	McKown, Floyd F.
60	Hunt, Homer H.	124	Laquatra, Leo	188	Dooney, John J.
61	Peacock, Floyd H.	125	Hygh, Relliford	189	Walsh, Bernard A.
62	Elder, James C.	126	Mondt, Howard	190	McGhee, Lester L.
63	Morris, Reuben B.	127	Wetzorke, Bruno	191	Norris, Walker W.
64	Hoffman, Leonard L.	128	Gurley, Bert E.	192	Newland, Gus V.

*Appointed Technical Sergeant since January 1, 1937

193	Hagan, George M.
194	Warren, Henry M.
195	Shellhorn, Edward
196	Ray, Floyd F.
197	Terrell, Harry A.
198	Gregg, Emmett L.
199	Meeks, John D.
200	Harth, George J.
201	Brock, Norris
202	Bisbal, Germain A.
203	Goulla, Jack
204	Novak, Louis W.
205	Boyles, George D.
206	Gutierrez, Arnoldo
207	Charbaugh, Michael E.
208	Carr, James W.
209	Martin, Paul H.
210	Hodges, Herbert P.
211	Beckham, Reuben S.
212	DeFord, Lyman
213	Smith, Sigsbee J.
214	Delaney, Samuel J.
215	Castlemaine, Karl W.
216	Chestnutt, Herman L.
217	Vidmar, Frank
218	Parnes, Max
219	Morrison, Jay P.
220	Armbruster, Otto
221	Tetu, Dona E.
222	Bishop, Chalmers N.
223	West, Henry L.
224	Simpson, Johnie S.
225	Flores, Alberto
226	Peluso, Tony J.
227	Bryan, Hugh
228	McLish, William B.
229	Ferguson, Homer E.
230	Slattery, Houston
231	Lawson, Lane L.
232	Mishmash, Charles J.
233	Milliard, Peter L.
234	Hall, Bolton
235	Kolb, Peter, Jr.
236	Hunsberger, Horace K.
237	Collins, Jacob
238	Mobley, Emmett A.
239	Martin, Troy V.
240	Jones, George S.
241	Dwyer, Charles L.
242	Laza, Joseph C.
243	Klapak, Andy
244	Podraza, Walter H.
245	Pond, Everett L.
246	Williamson, Henry
247	Fajnik, Nicholas
248	Hadley, Frank E.
249	Ciphon, Paul W.
250	Anning, Richard S.

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CORRECTIONS IN MASTER SERGEANT ELIGIBLE LIST

In the list of noncommissioned officers qualified for appointment to Master Sergeant, Air Corps, published in the issue of the News Letter of February 1, 1937, the name of Technical Sergeant Thomas V. Burns was inadvertently omitted. He is No. 46 on the qualified list, as of January 1, 1937, and No. 44 on said list as of February 28th, by reason of two promotions having been made. Sergeant Burns' position is between Technical Sergeants Walters and Stoser.

Technical Sergeant Donald P. Herb is shown as No. 80 on the Master Sergeant qualified list. His correct position is No. 85, between Technical Sergeants George D. McCartney and James G. Blais.

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WARRANT OFFICER APPOINTMENTS

The following-named Master Sergeants of the Air Corps have been appointed Warrant Officers, U.S. Army, effective March 1, 1937, they having been discharged from their present grade on February 28, 1937:

Ezra F. Nendell, Randolph Field, 30 years' service.

Daniel W. Fraley, Hawaiian Department, over 28 years' service.

William Arnold, Langley Field, Va., over 27 years' service.

John J. Arsenault, Scott Field, Ill., over 27 years' service.

Harry Rose, Langley Field, Va., over 25 years' service.

Joseph Pirisky, Panama Canal Department, over 25 years' service.

These appointments will create vacancies in both Master Sergeant and Technical Sergeant grades in the Air Corps on March 1, 1937.

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PROMOTIONS TO MASTER SERGEANT

The following noncommissioned officers of the Air Corps were promoted to the grade of Master Sergeant, Air Corps, effective March 1, 1937:

1st Sergeant Michael Binder, 11th Bombardment Squadron, Hamilton Field, Calif., transferred to 15th Obs. Squadron, Scott Field, Ill.

Tech. Sergeant Aaron J. Sanders, 12th Air Base Squadron, Kelly Field; to be carried on detached service at Kelly Field pending further orders.

1st Sergeant Wardell L. Mathews, 44th Observation Squadron, transferred to 7th Observation Squadron, Panama Canal Department.

Tech. Sergeant James D. O'Donnell, 91st School Squadron, Maxwell Field, Ala.; to remain on detached service at Maxwell Field until further orders.

Tech. Sergeant Ray Francisco, 62nd School Squadron, Kelly Field, where he remains on detached service until further orders.

Tech. Sergeant Joseph Bohrat, 30th Bombardment Squadron, March Field, Calif., to 50th Observation Squadron, Hawaiian Department.

Tech. Sergeant Alfred Bernier, 52nd School Squadron, Randolph Field, Texas, to fill vacancy in that organization caused by promotion of Master Sergeant Nendell to Warrant Officer.

Promotions to Technical Sergeant

Staff Sgt. Henry G. Hayes, 91st Observation Squadron, Fort Lewis, Wash.; to remain on detached service at that station until further orders.

Staff Sgt. John Howard, 47th School Squadron, Randolph Field, Texas; to remain on detached service at that station until further orders.

Staff Sgt. Joseph Bauer, 27th Pursuit Squadron, Selfridge Field, Mich.; to Maxwell Field, Ala., where he is to be carried on detached service until further orders.

Staff Sgt. Frank A. Donnelly, 7th Observation Squadron, Panama Canal Department, where he is to be carried on detached service until further orders.

Staff Sgt. Homer Routt, 46th School Squadron, Randolph Field, Texas, where he is to be carried on detached service until further orders.

Staff Sergeant Roscoe O. Smith, 52nd School Squadron, Randolph Field, Texas, to vacancy in that organization caused by the promotion of Technical Sergeant Bernier to Master Sergeant.

"SHOOTING" THE FLOOD

BY the Bolling Field Correspondent

"I have photographed other floods and disasters which covered more area, such as the Susquehana and Johnstown Rivers floods in 1936 and the Mississippi flood in 1927, on which we worked some eight weeks, but never have I seen one causing the complete evacuation of cities the size of Paducah, Ky., nor any other causing the enormous damage to life and property as this one has wrought."

The speaker was Captain H.K. Baisley, Air Corps, commanding the 20th Photo Section, stationed at Bolling Field, D.C., upon his return from a photographic mission in the stricken area.

From January 27th to February 6,1937, Captain Baisley, accompanied by Master Sgt. Andrew E. Matos, 20th Photo Section, piloted a Fairchild C-8, photographic airplane over the flooded district. They flew a total of forty-one hours, covering over 3900 square miles in thirteen separate flights,"shooting" continuously from morning till night vertical and oblique views of the flood crest in order to determine the area covered by water and the "high water marks" from Beaver, Pa. to Cairo, Ill.

Capt. Paul T. Cullen, Air Corps, also flying a C-8 Fairchild, with crew from Mitchel Field, was on the same mission, and the Army airmen worked almost unceasingly to accomplish their detail. Flying at from eight to ten thousand feet, according to the weather flying conditions, vertical views were taken and, despite rain, snow and overcast skies, Captain Baisley reports exceptional success with the somewhat over five thousand exposures he took.

The standard aerial film (type 1A, Class A) was used in the three T3A cameras for vertical, and the K3B camera for obliques, proving the rapid strides in photographic progress in late years. Captain Baisley stated that a few years ago such a mission could not have been so successfully accomplished.

On one occasion Captain Baisley and Sergeant Matos flew for ten hours, finally landing at about 10:45 P.M.,after taking pictures all day. Through the use of his two-way radio equipment, the Captain had obtained permission from the Chief of the Materiel Division at Wright Field, under whose orders he was performing, to gas up and lunch at Scott Field, Illinois, the nearest safe field in the territory being surveyed at that time. This radio communication thus saved many valuable hours which were used to advantage in photographic work.

Realizing that a T3A camera cannot be reloaded while the plane is in the air and appreciating the difficulty and time lost in locating safe landing fields,the two airplanes each carried three T3A's, using multiple lenses. These cameras were loaded and put aboard the planes, one in the camera mount and the other two "standing by". Once in the air, with Captain Baisley at the stick,Sergeant Matos began shooting and, as soon as all the film was used in one camera, he would slide another T3A into the mount and continue taking pictures.

It can be readily appreciated that maneuvering a 135-pound camera while in flight is no mean task, but the time saved by this method proved invaluable. "In fact", Captain Baisley stated, "it became a question of which supply would become exhausted first - our gasoline or film." By this method two airplanes accompanied a mission which would ordinarily require six.

The procurement of the required 87 octane gas for the plane was at times difficult, and on one occasion only 70 octane gas was available at Vincennes, Ind. This fuel was so full of rubber particles and other foreign matter that the strainers soon became clogged,causong the engine to miss badly and necessitating a forced landing at Sullivan, Indiana. Although the field was half under water and without landing lights, a successful landing was effected and word sent to Wright Field. Here again the two-way radio proved its worth. From Terre Haute, Indiana, a supply of good gas was obtained and the mission carried on.

Captain Baisley has had over ten years' experience in photographic work, having graduated from the Photographic School in 1926. He has been stationed at Bolling Field for the past two and one-half years. Sergeant Matos came to Bolling in 1920,entering photographic work and remaining in that capacity ever since.

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NEW TYPE AIR SPEED INDICATORS

When the newly constructed Control Tower is placed in operation at Bolling Field early in March,it will be equipped with the "last word" in weather instruments. These include a Velocity Transmitter and Indicator. The transmitter is a magneto generator of the tachometer type, to which is fastened a set of anemometer cups. It is known as the Weston Voltmeter, calibrated in miles per hour for direct reading. No outside current is needed, as the magneto furnishes its own as the wind turns the cups.

The direction unit is composed of a Selsyn motor, to which is connected a three-foot wind vane and a dial showin degrees of the compass and the cardinal and semi-cardinal points. The pointer on the dial is operated by another Selsyn motor which is in synchronization with the one in the transmitter. With the movement of the transmitting motor, the indicating motor turns the pointer on the dial. For the direction unit, 110 volt, 60 cycle AC current is needed. The two indicators are mounted in a compact panel, about 12 by 18 inches.

It is believed that this is the first of this type of instrument to be placed in service with the Army, particularly the direction unit. One or more of the velocity units have been installed at Langley Field and Bolling Field for some time.

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BOLLING FIELD OFFICER MAROONED BY FLOOD

An unexpected "box seat" view of the flood stricken area in the mid-west was obtained recently by 1st Lieut. William E. Hall, Air Corps, stationed at Bolling Field, D.C.

While making an extended navigation flight, Lt. Hall stopped one night at the field at Blytheville, Arkansas. The next morning when he arrived at the field to take off on his return to Bolling he found his P-12-E airplane hopelessly mired in the mud and high waters of the flood.

It was thirteen days before Lieut. Hall could get his ship into condition for flying, and much anxiety for his personal safety was felt at Bolling until word came that he himself was "high and dry".

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THE STUDENT MAINTENANCE NAVIGATION FLIGHT

By the News Letter Correspondent

Students of the Advanced Flying School participating in the pre-graduation maintenance navigation flight, taking an entirely new route, left Kelly Field Feb. 3d and returned Feb. 11th.

The flight was successful from the very beginning. Bad weather was encountered during the first hour out of Kelly, but after that excellent flying conditions prevailed, with the exception of one day at Maxwell Field, which delayed the flight. The weather was very cold, especially at Athens, Georgia, where batteries were insufficient even to budge the propellers. Everybody with whom we came in contact seemed keenly interested in aviation and as to the purpose of the flight. This interest was evidenced not only by military personnel at the various colleges, but by the presidents of these institutions and faculty members. At each college, those who were interested in aviation had everything explained to them. The Flying Cadets were all entertained by the fraternities at the various colleges. The largest crowd was at the University of Alabama, where 300 ROTC cadets showed up en masse and asked questions about aviation. Other universities visited were Georgia Tech, Alabama Polytechnic, University of Georgia and Louisiana State. Landing fields were generally crowded with spectators, both on the arrival and departure of planes. Not a single forced landing or trouble of any kind was experienced by the student flyers. It is believed that a great deal was learned and accomplished on the trip and that in future similar trips with instructors will be made at the end of each class.

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77TH PURSUIT HAS EXCELLENT MESS

Without a mess of its own for over a year and a half, the 77th Pursuit Squadron, Barksdale Field, La., begun a mess on December 11th. To date, with a daily average strength of forty rations, the mess has managed affairs satisfactorily, and it is the boast of every member of the squadron that it is the best on the Field. Lt. Desmond as Mess Officer, aided by Mess Sergeant Cantrell and cooks Doughty, Flynt, and Hanes established an enviable record for mess management.

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WEATHER AIDS TRAINING PROGRAM IN HAWAII

The month of January in the Hawaiian Islands was characterized by calm weather, clear skies and cloudless nights, including a week of limpid tropical moonlight. In consequence of these inspiring conditions, the units of the 5th Composite Group at Luke Field, T.H., achieved substantial progress toward the completion of the annual training program.

Emphasis was placed on navigation and photography in the Observation (Reconnaissance) Squadrons, while each of the Bombardment Squadrons completed one of their periodic tours of the Islands, the local substitute for the 500-mile cross-country flight required on the mainland. Night Flying received special attention by all units.

Among the more interesting photographic projects completed or still in progress are: a mosaic of the mountains and valleys of eastern Molokai in connection with a study of the water shed of the island; vertical and oblique photographs of the work now in progress in enlarging the airports on the outlying islands, and a special mission to obtain photographs for historical records of the Heiau at Napoopoo, Hawaii. (For the benefit of those unfamiliar with Hawaii, a Heiau is an ancient Hawaiian temple, the remains of many of which are visible about the islands.)

MISSOURI NATIONAL GUARD AIRMEN IN FLOOD RELIEF WORK

By the News Letter Correspondent

The part played by the Missouri National Guard Aviation in the flood crisis in Southeastern Missouri is a very good example of one of the many emergencies where aviation may be called upon to render service available from no other source.

On Saturday, January 23,1937,two planes of the 35th Division Aviation,Missouri National Guard, were ordered to Sikeston, Missouri, for flood relief work. Arriving just before noon, the airmen reported ready for service to Captain Shephard of the Missouri State Highway Patrol with whom the detachment was to cooperate. The danger area, as set forth by Captain Shephard, was bounded by the untried set-back levee built in almost a straight line from Birds Point on the North to New Madrid on the South, and by the old levee that followed the course of the Mississippi River between these points. This is an arc 35 miles long and varies from 3 miles wide, to 18 miles at its widest point. Several hundred families made their homes in this area. Most of these houses were widely separated, some being miles from their nearest neighbor. General Lewis M. Means,The Adjutant General of Missouri, arrived in a third plane to take personal command of the situation.

The first day of this ten-day detail was spent patrolling the outer levee between Birds Point, across the river from Cairo, Illinois, and New Madrid, and dropping warnings to the population in the danger area. The area between the levees was in immediate danger of being flooded, and it was to be the job of the aviation to cooperate with the State Highway Patrol and other ground forces to warn the populace in the area of the impending danger and to eliminate, as far as possible, the loss of life.

As the water was already very near the top of the old levee and still rising, it was necessary that everyone within this area be warned of the flood that was sure to come. For this purpose,mimeographed copies of the warning were placed in paper sacks, weighted with stones, fastened with yellow cotton streamers, and dropped to everyone that could be seen from the planes. Two-way radio contact was established and kept at all times with the State Highway Patrol Headquarters through W9VDG and W9VID amateur radio operators in Sikeston. Two commercial radio receivers were installed at State Patrol Headquarters, one tuned to the airplane frequency and the other to the ground station frequency. The ground station had direct phone connection with the Headquarters, and in this manner orders and reports were received and acknowledged practically as fast as if the transmitter were located at the Headquarters on the ground.

Early on Monday, January 25th, the first breaks in the leavee were reported by radio in a plane from Birds Point. In rapid succession, breaks along this section of the levee were reported by radio. The river was going over the top of the levee in a dozen places and already houses and barns near the breaks were being broken to pieces and washed away. As the floodway between the levees filled, boat stations were established along the set-back levee and State Patrolmen were stationed at these points with their radio-equipped cars. Reports of people in distress were given by radio from the plane directly to these Patrolmen, who would immediately dispatch boats to the aid of the marooned people. Often it was necessary for the planes to direct the boats around woods or through ice.

On Wednesday morning,two planes took the air systematically to check every house located in the floodway. This was found to be the only practical method to make sure no one was left in need of aid. This took all day Wednesday and part of the next morning. Water was backing up behind the set-back levee North of New Madrid, and this area now called for considerable reconnaissance. Though there was very little or no current in this backwater it was spreading more and more every hour, and houses were being filled to the second floor. This water had covered miles of farm land behind the levee and another boat station was necessary to send boats to these homes and remove the people.

On Thursday, Governor Lloyd C.Stark, of Missouri, was flown to Sikeston in one of the Missouri National Guard planes to view the flooded area. After inspecting the entire flooded district by air, he inspected the emergency relief headquarters. He was accompanied on this aerial inspection by General Means in the second Missouri National Guard plane. It was on this tour of inspection that one family and several children were located in the flooded area and a radio request for aid was immediately dispatched by the pilot of one of the planes.

This tour of duty lasted ten days and 114 hours were flown in patrolling the levees in reconnaissance and photo work.

The detachment was under the command of Captain Eric H. Kaeppel and included Lieutenants Ray H. Kutterer, Cloon E. Freeman, Kenneth R. Case, James H. Higgs, Sergeants Arthur P. Rethemeyer, William T. Rainey, Francis B. Grothe, William A. Brazill, and Vernon C. Wallach. The Experience encountered on this occasion will be long remembered by those who took part in the work.

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The presence of airplanes to aid the ground forces made it possible to save scores of lives of people, whom it would otherwise have been impossible to locate. Certainly the value of observation aviation in this type of work has been definitely established.

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FOILED BY THE INAUGURAL WEATHER

Several million radio listeners failed to hear any mention of the participation of the 20th Pursuit Group in the recent Inauguration Ceremonies for President Franklin D. Roosevelt. Investigation disclosed that this failure was due to the fact that the 20th Pursuit Group, thirty-three airplanes of which left Barksdale Field on Saturday, January 16, for Washington, to take part in the exercises, failed to get any farther than Atlanta, Georgia.

Led by Major Armin F. Herold, Group Commander, and Headquarters Flight, the three squadrons took off on extremely short notice in an effort to beat unfavorable weather conditions to Maxwell Field, Montgomery, Alabama. The "hop" to Maxwell was made without incident, but at that point the Group was held up for two days on account of bad weather. Finally able to clear for Fort Bragg, North Carolina, on Monday, January 18th, the Group got as far as Atlanta, where, during a stop for servicing, the ceiling closed down and a hard rain set in. Zero-zero conditions prevailed until it was decided that it would be useless to attempt to reach Washington in time for the Inauguration. A majority of pilots seriously considered taking leave and going home via rail for the duration of the bad weather.

The ceiling finally lifted sufficiently to enable the Group to take off for Maxwell on the return trip on January 19th. At this station it was found impossible to proceed more than a few miles in the direction of Barksdale Field, and while grounded there the Group was joined by the 3d Attack Group, which was en route home from Langley, their farthest point on the same hop. On Monday, January 20th, conditions improved sufficiently to allow a take-off for points West, and the two Groups cleared the airdrome on the heels of a 43-ship flight of Marines, the Marines being passed before reaching Barksdale Field.

The efficient and hospitable manner in which Maxwell Field, with but a few hours' notice, took care of the personnel of the flight, both going and coming, and the manner in which Major Patrick's detachment in Atlanta provided for the comfort of the 20th Pursuit Group pilots at that station aroused much favorable comment, and all pilots join in a hearty vote of thanks to the responsible parties.

OLD-TIMER BEMOANS LACK OF ROMANCE IN AVIATION

Romance in aviation is gone and there is nothing left but a cold-blooded business proposition, was the opinion of Major Erik Henning Nelson, former army flyer and member of the Air Corps' Around-the-World Flight in 1924. He visited Kelly Field and recalled the old days of flying, with his old side-kick Major "Cliff" Nutt, and others. He also called on Colonels Krogstad and R.M. Jones, with whom he had been associated. Major Nelson left the army on July 1, 1928, and has been with the Boeing Airplane Company until a year ago. He is now in business for himself. A native of Stockholm, Sweden, he was born June 18, 1888, and came to the United States on April 15, 1909, as a sailor. Since that time his life has been full of the romance which he says has departed from modern military aviation. He served with the Air Corps 11 years, beginning his service in October, 1917. He had previously been interested in flying back in 1912 and received his training at Miami, Florida, where he also served as a mechanic. In 1924, he was selected as one of the pilots for the Army's Around-the-World Flight, which made aviation history.

Stationed at Kelly Field from Sept. 26, 1919 to May, 1921, Major Nelson and Major Nutt were at that time members of the First Bombardment Group, which was brought from Ellington Field, near Houston. Major Nelson was a member of the 20th Bombardment Squadron and Major Nutt of the 166th Bombardment Squadron. The latter unit has been placed on the inactive list. The next time Major Nelson was at Kelly Field was after the world flight. When that flight was made, Major Nutt was the advance agent in the Orient for the army flyers. Declaring that the best part of his life had been with the Air Corps, Major Nelson expressed regret over the passing of the old days of "Flying Jennies", when there was some doubt whether the flyer would return safely or be able to walk away from a plane. Although out of the service, he still keeps contacts with his friends in the army, which is one reason why he stopped off at Kelly Field, en route by auto from the West Coast to Miami and Key West, Fla. for a vacation. He commended the excellent roads between San Antonio and El Paso, which contrasted greatly to their condition when he was on duty with the border patrol.

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Officers promoted to the rank of Major (temporary) were Captains Delmar H. Dunton and Orvil A. Anderson from January 26th, and Emile T. Kennedy from February 1, 1937.

96TH BOMBARDMENT SQUADRON COMPLETES TRIP TO PANAMA AND RETURN

Thursday, February 11th, saw the completion of the longest over-water navigation mission yet performed by a formation of land planes. The 96th Bombardment Squadron, of the 2d Bombardment Group, GHQ Air Force, equipped with B-10B airplanes, made a trip from Langley Field, Va., to Albrook Field, Canal Zone and return; the flight taking off from Miami, Fla., to Panama, direct, and returning the same route.

The 96th Squadron was ordered to start this flight on February 5th, the itinerary being as follows:

Feb.5th - Langley Field to Miami,Fla.
Feb.6th - Miami,Fla.to Albrook Field,CZ
Feb.9th - Albrook Field,CZ.to Miami,Fla.
Feb.10th- Miami, Fla., to Langley Field

Prospects of bad weather caused the squadron to leave Langley Field on the afternoon of the 4th and proceed to Spartanburg, S.C., where it remained overnight. A terrific snowstorm was encountered near Charlotte, S.C.,but the squadron closed in on Major McDuffie, the squadron commander, and plowed on through even though all pilots were flying blind at times.

The following day, February 5th, the squadron proceeded to the Municipal Airport, Miami, Fla., where all tanks were filled to the brim and the motors given a final check. Saturday morning, February 6th, the squadron cleared for Albrook Field, C.Z., and at 0807, started on the long over-water hop. Everything was functioning perfectly and the pilots and navigators had hardly gotten settled down to work when Cuba was sighted.

Due to high cloud formations, the squadron was at all times above 4,000 feet, and at one time had to go to 13,000 feet and fly over solid overcast for an hour, but they made the best use possible of their octants at this time. After approximately seven hours of flying, Major McDuffie took his squadron down through broken clouds and everyone breathed normally again, for there was Panama! The navigation had been successful, as Cristobal was in sight,just to the right.

The squadron landed at Albrook Field, where a royal welcome awaited them. However, every member of the flight was greatly fatigued and could not respond in the manner they would have liked.

Early Sunday morning the officers and men were at the hangars and, with the help of Albrook personnel, the planes were put in readiness to start the return trip by noon. However, the squadron was to remain until Tuesday, so Sunday afternoon and Monday were given over to sight-seeing and shopping. The Carnival season was on, and the gayety was so contagious that everyone was ready to stay over several more days.

Tuesday morning saw the B-10B's loaded to go, and the squadron took off at 0740. Albrook Field with its surrounding hills is none to large for heavily loaded bombers, but they all got off safely, and at 0811 they left Colon and started the long trek back to the United States.

Winds slowed down the progress of the flight all of the way to Cuba. At one time it measured 37 knots and was coming from 45 degrees off the nose. Also, low clouds were encountered and the formation stayed close to the water. In the middle of the Caribbean, the squadron had its most exciting moment.

Captain Cousland, leading "B" Flight, suddenly called over his radio,"Motor Failure!" His left engine died without a cough, when it was over 200 miles to the nearest land. Captain Cousland immediately set his plane for flight on the right engine but, due to the low altitude, the right engine started heating, and it was evident that land could not be reached. Two planes were left to stay with the cripple and the OA-5 notified. The plan was for the OA-5, being slower, to precede the squadron, so that the squadron would pass it in the middle of the Caribbean. Due to accurate navigation, the OA-5 was in sight at this time, but it is doubtful if it could have landed in the mountainous seas. After several minutes of rest, and with the water only 600 feet below the plane, the left engine began running again, and the Caribbean was cheated out of one B-10B airplane. Lt. Gibbs,the navigator in this ship, reset his course and the squadron was soon overtaken.

The squadron landed at Miami at 1544, thus establishing the feasibility of the Canal Zone being defended by air units from the U.S.,upon short notice. Although careful preparation was made for this flight, one scheduled plane was out two hours before the take-off from Langley. Another plane was wheeled out and made the trip successfully.

Due to bad weather, the squadron remained one day in Miami on the return trip and on Thursday bucked a 30-knot wind back to Langley Field. Langley looked mighty good to all the tired officers and men in the flight, and everyone seemed glad to be home again.

The OA-5 accompanied the flight for rescue purposes and successfully completed the trip on schedule. Corp.Miner had to remain in Miami as he broke his hand when the anchor davit gave way as they were anchoring the ship. The accuracy of the navigation is shown by the fact that the OA-5 was sighted each time the squadron passed it en route.

(Continued on page 23)

BROOKS FIELD RESPONDS TO THE MERCY CALL

As soon as it was learned that the army would assist in the contemplated evacuation of flood victims along the Mississippi Valley, the Commanding Officer called a conference and relayed this information to his staff officers and organization commanders. They were directed to have detailed plans ready for a conference the following day.

At this conference, the entire plan was decided upon and definite arrangements were made for every detail. One plane had already been sent to Louisville with serum for the flood suffers.

Tests of the loading of trucks for the ground echelon were conducted, and the full number of trucks needed were designated. These trucks were then loaded, and the enlisted men who were to form the ground echelon were notified to be on the alert and to be ready to leave on a moment's notice. Results of the tests showed that the ground echelon could leave Brooks Field in two and one-half hours at the maximum.

Airplanes were loaded and ready to leave whenever the word came. Only local flying was to be engaged in.

Up to this writing, a total of 118 hours were flown by planes from Brooks Field engaged in the relief work. These planes have been AC-33 transport, O-43A Observation airplanes, and the Fairchild photo plane. The photographic plane is now engaged in missions at Vicksburg in connection with this work.

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96TH'S TRIP TO PANAMA
(Continued from page 22)

On the return trip, Cuba was touched within six miles of the correct course.

We all congratulate the officers and men of the 96th Squadron on a mission well done.

The following is a list of the personnel who made this flight:

Major Jasper K. McDuffie, Captains A.Y. Smith, Richard E. Nugent, C.W. Cousland, 1st Lieuts. David R. Gibbs, Frederic E. Glantzberg, Warren H. Higgins, Edwin L. Tucker, William A. Matheny, Douglas M. Kilpatrick, Paul G. Miller, Gerald E. Williams, Torgils G. Wold, Edwin G. Simenson, Clifford H. Rees, Eugene P. Mussett; 2d Lieut. Burton W. Armstrong, Air Corps, and 2d Lieuts. Herbert Morgan, Jr., John L. Templeton, John B. Montgomery, Raymond V. Schwanbeck and Arthur H. Rogers, Air Reserve.

Enlisted men - Staff Sgts. Donald E. Hamilton, Ralph R. Illick, George E. Wilson, August W. Kouhl, John B. Long, Walter B. Buff, Frank J. Seidl, Jack A. Franke; Corporals - Thomas G. Holmes, Gib Bradley, Lewis Hayduke, Ralph A. Miner; Privates, 1st Cl.- William A. Withers, Amil A. Mallada, Francis T. Harrington, Russell E. Junior, Lewis D. Smith, Clarence D. Lake; Privates - Charles Horstkamp, Edward Ellis and Harry O. Johnson.

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POSTHUMOUS AWARD OF THE D.F.C.

The Distinguished Flying Cross, posthumously awarded Captain Donald W. Buckman, Air Corps, who died in 1935, was presented to his widow, Mrs. Madeline Stone Buckman, at 10:00 o'clock on Wednesday morning, February 10th. The presentation was made by Brig. General James E. Chaney, Commandant of the Air Corps Training Center, in the Training Center Headquarters at Randolph Field.

The heroism of Captain Buckman which brought about the award occurred in November, 1935. Stricken with a heart attack while flying a Transport plane with three passengers over Tehachati Pass, Calif., he managed to remain at the controls for 20 minutes until he landed the plane safely at Kern Airport, Bakersfield, Calif. He collapsed immediately after the plane landed and died within a few minutes.

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AIR CORPS EXHIBIT FOR NATIONAL AVIATION SHOW

The U.S. Army Air Corps was represented at the National Aviation Show by an exhibit composed of both old and new aeronautical items, demonstrating the progress in aviation through the years. A new Seversky Basic Training plane, a two-place, low-wing monoplane of all-metal construction of the latest type, incorporating instrument landing equipment, and having split flaps, was of leading interest.

A Diorama in miniature of a fog enshrouded landing field over which two small airplanes fly was displayed. These airplanes tune in with radio guiding stations, and with this aid glide safely down upon the landing field runway before the hangars. These little planes illustrate better than words the manner in which the instrument landing system is employed.

In this connection, the Original Instrument Board from the airplane in which Capt. Hegenberger made the first solo instrument landing in history, was shown, together with pictorial displays illustrating stages of instrument flying development, and Captain Hegenberger receiving the Collier Trophy at the hands of President Roosevelt.

Another pictorial exhibit of interest was devoted to Parachutes, and illustrated various types of chutes and methods of packing and jumping from an airplane.

A case of Aircraft Models made to 1/40-scale and covering various types of planes, from the wartime "Jenny" and DH-4 to the latest Boeing Bomber, attracted much attention.

A Motion Picture depicted aviation development and historical progress from the Wright's first flight.

Two cases of newest Navigation and Engine

Instruments emphasized changes made since the 1918 instrument board, with its older protruding instruments, was in use.

An old type of Wooden Propeller was seen in contrast with the latest hollow steel controllable pitch propeller. There were mounted wing sections for those interested in aircraft structures. This is but a partial list of the exhibits which formed a display interesting and informative for an air-minded public.

Four representatives were sent to New York from the Materiel Division to take charge of the exhibit, namely, Messrs. S.G. Somers, F.S. Fisher, W.J. Selleck and Robert Fitzgerald. The hours were from eleven a.m. to eleven p.m., and a constant stream of visitors attested to the public interest aroused. The Chief of the Air Corps was one of a long list of prominent visitors who gave whole hearted approval of the display.

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WAR DEPARTMENT ORDERS

Changes of Station: To Randolph Field, Tex: Lieut. Colonel Albert M. Guidera (Major) from Langley Field, Va., for duty at Air Corps Training Center.

To Scott Field, Ill.: 1st Lieut. William J. Bell, from Selfridge Field, Mich.

To West Point, N.Y.: 1st Lieut. Charles F. Born, from Hawaiian Department, for duty at the U.S. Military Academy. Previous orders in his case amended.

To Santa Monica, Calif.: 1st Lieut. Daniel B. White, from Wright Field, for duty as Air Corps Representative at the plant of Douglass Co.

To Panama Canal Dept.: 2nd Lieut. Lawrence W. Greenback, from Langley Field, Va.

To Maxwell Field, Ala., for duty on the Staff and Faculty of the Air Corps Tactical School: Majors John E. Upston and Harlan W. Holden (Captains), Captains Robert C. Oliver, Ralph A. Snavely and Augustine F. Shea.

To Wright Field, Ohio: 1st Lieut. Charles G. Williamson, from Hamilton Field, and to report not later than August 1, 1937, for duty as student at Air Corps Engineering School.

PROMOTIONS: To Colonel: Colonel John F. Curry (temporary) from December 23, 1936; Brigadier General James E. Chaney (Lieut. Colonel), from December 24, 1936. To Lieut. Colonel: Lieut. Colonel Ralph P. Cousins (Major) from December 22, 1936; Lieut. Colonel Adlai H. Gilkeson (Major) from December 24, 1936.

RETIREMENTS: Captain Albert F. Glenn, February 28, 1937, for disability incident to the service; Staff Sergeant James J. Geraghty, 8th Air Base Squadron, Brooks Field, Feb. 28, 1937.

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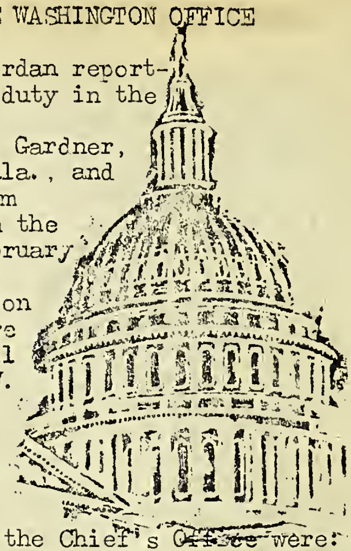
The War Department announced on February 25th the purchase from the Sikorski Aircraft Division of the United Aircraft Corporation of Bridgeport, Conn., of 5 large Amphibian planes and spare parts equivalent to one complete amphibian plane, for the sum of $633,898.

To adapt these planes for military purposes, the commercial design has been modified. The wing span is slightly in excess of 85 feet. The planes are powered with two 750 h.p. engines.

NOTES FROM THE WASHINGTON OFFICE



Captain James B. Jordan reported February 11th for duty in the Supply Division.

Majors Grandison G. Gardner, from Maxwell Field, Ala., and Bennett E. Myers, from Wright Field, were in the Chief's Office on February 24th for conference.

Officers departing on leaves of absence were Major Charles Y. Banfil and Captain Stewart W. Towle.

Lieut. Colonels H H. Young and Geo. E. Brower returned from leave, February 17th.

Recent visitors to the Chief's Office were: Captain George H. Steel, from Kelly Field, and Captain George A. Whatley, also from that field, both on a ferry trip to Mitchel Field, N.Y.; Captain Claire Stroh, Instructor, National Guard, Little Rock, Ark., while on a ferry trip from Santa Monica, Calif., to Baltimore, Md.; 1st Lieut. B.G. Scott, from Kelly Field, while on leave; Colonel Frank M. Kennedy, from Scott Field; Captain Archibald Y. Smith from Langley Field; 1st Lieut. Ralph O. Brownfield, from Scott Field; 1st Lieut. August W. Kissner from Kelly Field and 1st Lieut. Gabriel P. Disosway from Barksdale Field, during the course of navigation flights.

Officers who returned to their home stations after a visit to the Chief's Office were Capt. Carl B. McDaniel and 1st Lieut. Ivan M. Palmer to Randolph Field.

Major Alfred W. Marriner returned from Wright Field and Captain Mervin E. Gross returned from a ferry trip to the West Coast.

Major Lowell H. Smith departed February 22nd on a navigation flight to Miami, Fla.

Captain Henry G. Woodward was a visitor from Wright Field, arriving February 22nd.

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A NEW WAY OF SENDING MESSAGES

Private W.S. Holloway, stationed at Phillips Field, Aberdeen Proving Ground, Md., in a recent communication, has this to say regarding a visit of Lieut. Nichols (dubbed the "Windmill Salesman" by virtue of his piloting an autogyro) who was "oxed" at the field on the teletype:

"I was standing in front of operations when he arrived. Seeing me, the Lieutenant hovered about three hundred feet in the air, leaned out and yelled - 'Hey, tell Operations that I am going on to Bolling.' Then he swung gracefully away and vanished.

I have been in the Air Corps quite a while and have never seen as novel a way of delivering a request for a message. Also I might say that Lieut. Nichols has been here in two of his "Jeeps," as he calls them, and he can make them do everything but talk and give milk."

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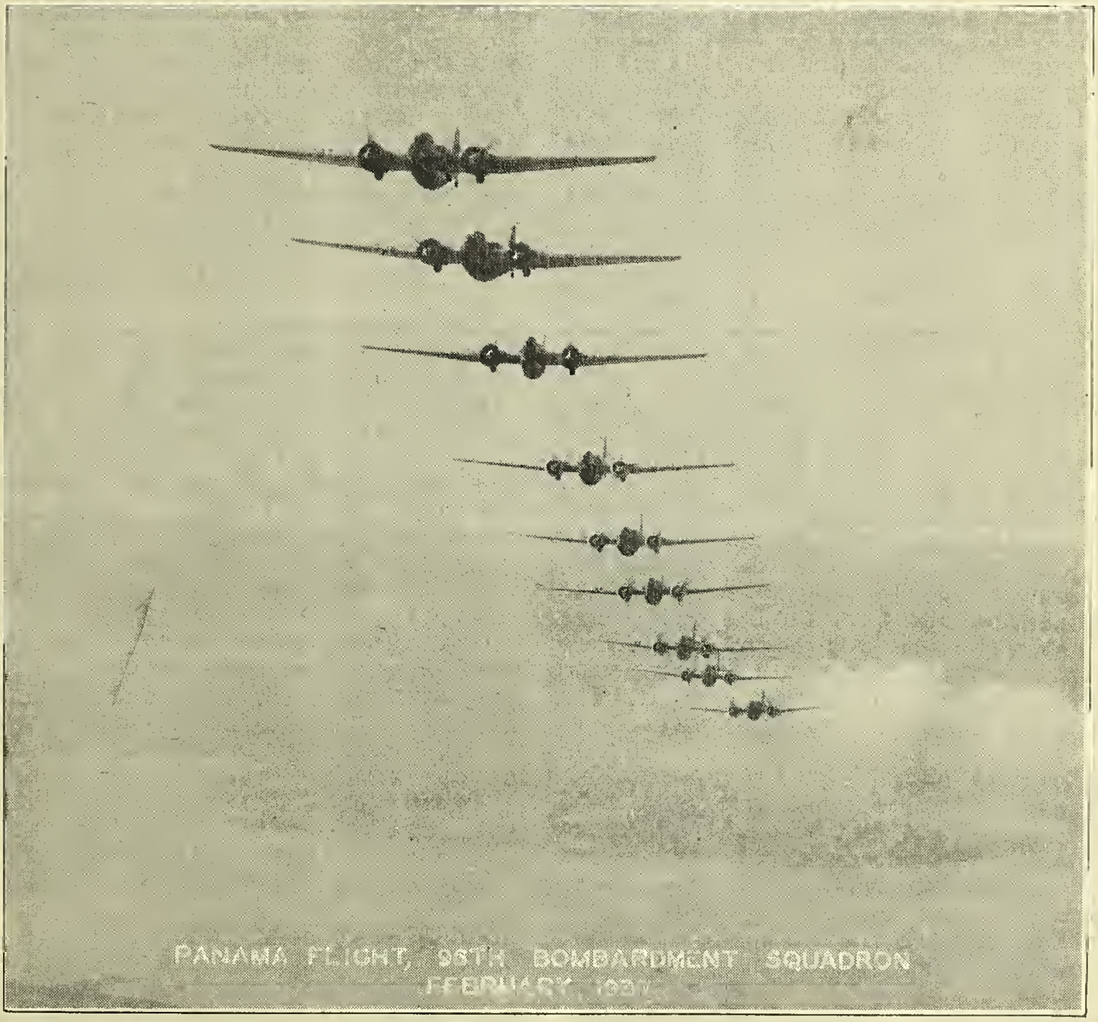
AIR CORPS
NEWS LETTER



PANAMA FLIGHT, 96TH BOMBARDMENT SQUADRON
FEBRUARY, 1937

ISSUED BY
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The chief purpose of this publication is to distribute information on aeronautics to the flying personnel in the Regular Army, Reserve Corps, National Guard, and others connected with aviation.

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MATERIEL DIVISION ACTIVITIES OF 1936

ANY review of Air Corps activities for a given calendar year must of necessity be brief in order to maintain the interest of readers. As an opening we introduce the Materiel Division which is the technical service of the Air Corps.

The end of 1936 found the Division organization without major change except for the establishment of a Budget Office, which was introduced for the purpose of accomplishing a centralized control over a function which had formerly been executed by several isolated units. The Budget Office, under the direction of a Budget Officer, is charged with the preparation of the Budget Estimate for all Materiel Division activities, control of the subsequent expenditure of funds, and the accounting to higher authority for that expenditure.

A number of W.P.A. workers were taken on principally in construction and grading projects. The personnel on permanent status at the end of 1936 stood as follows: 100 officers, 44 enlisted men, and 1305 civilians. In the officer group, members of various services, such as Medical Corps, Signal Corps, Quartermaster Corps and Corps of Engineers work in cooperation with Air Corps officers in certain specialized projects.

The basic activities of the Materiel Division lie in three main sections - Engineering, Procurement and Field Service. The Engineering is responsible for design, development, and testing of equipment and for the preparation of engineering data used for evaluation and procurement purposes; the Procurement for the execution of all circulars, contracts, and pertaining legal documents, and for all actual procurement accomplished in the Air Corps; and the Field Service, for the supply and maintenance of all equipment procured for the distribution of supplies to the service.

During the calendar year of 1936, the main emphasis of the Division was placed upon the accelerated procurement program, with the result that contracts were completed for even more planes than were delivered in any previous year. The delivery of many of these planes, contracted for in 1936, was accomplished before the year was ended. Airplanes delivered during the calendar year 1936 and contracted for during 1936 and preceding years were in excess of 500.

Engineering. - In spite of concentration on procurement and the vast amount of engineering labor involved in connection with procurement, from the outlining of predictions to the checking of engineering results, the laboratories have continued in their research and testing with most interesting results.

Wheels. - Operation of the present streamline wheel and tire on soft ground was improved by widening the tire contour at the tip of the tread. A new series of so-called "smooth" contour tires have been under development. These have a smaller outside diameter for a given load than the present standard wheel, thereby reducing the amount of cut-out required in the wing for retracting gear. The new wheels in this series were designed in 27, 39, 44 and 47-inch sizes for loadings of 2650, 8000, 10,500 and 13,500 pounds, respectively. The 60-inch wheel was reduced to a 56-inch size with the same carrying capacity and footprint, achieving a more efficient shape and a saving in assembly weight. A 50-inch watertight wheel was ordered for experimental test on a YOA-5 airplane.

Propellers.- During 1936, efforts were directed toward the elimination of difficulties in existing designs rather than in the development of new types. The Propeller Laboratory conducted all the propeller tests for the Navy and the Department of Commerce, as well as for the Air Corps. It is the prime source of propeller engineering data in the United States.

The controllable pitch propeller reached a stage of development where it was procured for all new military airplanes except the primary trainer. After considerable research, the automatic or constant speed propeller was sufficiently perfected to warrant installation on several types of airplanes under current procurement.

Under experimental investigation were the synchronization of automatic propellers and the application of dual rotational controllable propellers, or two propellers mounted in tandem on separate concentric shafts rotating in opposite directions. The main interest in the latter type lies in the neutralization of torque effect on the airplane which becomes necessary in the use of the thousand-horsepower engine in small single-engine aircraft. Experimental blades produced by copper brazing in an atmosphere of hydrogen, and a type employing a singlereinforcing rib down the center line, were placed in production.

A wet magnaflux method of inspection first employed during 1936, discloses internal flaws not heretofore revealed by any known method of visual inspection forcing an improvement in manufacturing processes, in order to avoid rejections because of the flaws made evident.

The study of propeller vibration has continued to prove of paramount importance. Especially is this true since the increased rigidity of engine mounts for higher powered engines and the use of monocoque fuselage structures have raised the natural frequencies of these structures from below the flight range, in some cases, to the cruising range, thus magnifying the slightest amount of propeller unbalance.

The Wind Tunnel Laboratory developed, during 1936, the photographic method of measuring performance in landing and take-off. It has also been engaged in developing methods for measuring static thrust, ground friction, and net accelerating forces of actual airplanes as well as a method for measuring torque and thrust of an engine-propeller combination in actual flight.

Nose Wheel Landing Gear.- Investigation of a nose wheel type of landing gear based upon the theory of the unsoundness of the normal landing gear system, in which the airplane at rest is supported by a pair of wheels located forward of the center of gravity and a tail wheel in the rear of the airplane, has proved most interesting. Desiring to provide evidence of the adequacy of the system as applied to large airplanes of heavy wing loading and fairly high speed, a survey was made of Air Corps airplanes and a trial installation on a Douglas amphibian was effected. It was given thorough flight testing with satisfactory results. In addition to the more positive landing characteristics, prevention of nose-overs in soft earth, ground loops, and increased reliability in instrument landings, this system provides greatly improved stability in turns. The bimotor type of airplane lends itself to the nose wheel installation quite feasibly, and since this is the present conventional arrangement for airplanes of large size and weight, it seems possible that the nose wheel may find favor for future construction.

Lighter-than-Air.- Two motorized balloons were ordered for flight tests for delivery in the latter part of 1936 and procurement data were prepared for a high-speed, single-engine balloon winch truck equipped with a collapsible mooring mast for use with the motorized balloons. The only balloon in the world constructed completely of synthetic rubber was produced - the Army Observation Balloon, Type C-3. The material was selected after extensive research and testing and has been proved to possess excellent durability, gas-holding, and weather characteristics. A definite increase in the life of this balloon over the one constructed of genuine rubber is expected.

Rubber-coated Hose.- This experiment led to the development of an all-purpose synthetic rubber-coated hose which is impervious to the deteriorating qualities of coolants, gasoline, or other chemical solvents at all temperatures encountered in practice.

Engines.- Power plant engineers have concentrated on increasing the power output of engines in service, design of new types, improvement of fuels to permit greater power output with reduced fuel consumption, development of automatic controls, and an oil dilution system for cold-weather starting.

The power output of the air-cooled engine has steadily increased and the introduction of the 14-cylinder, 2-row types permits higher engine rotating speeds.

Oil Dilution System.- Invented by an Air Corps engineer, an oil dilution system permits cold-weather starting of engines, without the use of external heat, even at extremely low temperatures.

Materials.- The probability of flight at high altitudes has introduced the problem of materials whose properties must not change under lower temperatures, and a vast amount of testing in the cold room under temperatures of -50° F. has been carried on. Since windows must withstand an interial pressure, the physical properties of glass and glass substitutes had to be obtained. It was found that new resinous materials with the transparency of glass but considerably stronger offered a solution to this problem.

Navigation Equipment.- A Douglas C-33 airplane was assigned to the Instrument and Navigation Unit during 1933 for the purpose of testing the automatic pilot, gyro octants, drift sights and signals, and other navigation equipment. Several test flights over water, two from New Orleans to Brownsville, Texas, furnished valuable information on the equipment carried. Automatic control of the increasing number of instruments with which the modern airplane is equipped is one of the outstanding Division aims and this work has been pursued in the laboratories constantly through the year. A synchronous control for multi-engine installations showed promise. Operating on bench tests, a small model automatically synchronized speeds much better than could be accomplished by manual control.

Electrical Equipment.- Electrical development has been characterized by exploration into the field of alternating current for aircraft application, and an experimental installation prepared for fiscal year 1937. Portable-by-air lighting equipment for landing fields was under development.

The design of landing lamp assemblies was modified to reduce parasite drag especially for airplanes of over 200 mph. cruising speed. These lamp assemblies are installed in the leading edge of the wing and use a glass lens conforming to the wing's contour.

Miscellaneous Equipment.- A shoulder type safety belt was developed to prevent head injury to the aviator in a crash.

A small compact pneumatic life-preserver vest worn during over water flight and quickly inflatable with CO_2 gas was adopted. Previous types of life-preserver vests were constructed of kapok. The new vest has a light fabric outer shell with an airtight latex inner cell which can be readily inflated in emergency and is far less bulky for cockpit operations with guns, cameras, etc.

Tests were completed on a light-weight tent and sleeping bag suitable for Arctic regions.

Oxygen masks for gaseous oxygen were improved and tested. Due to the difficulty of obtaining liquid oxygen, the universal use of gaseous oxygen was faced as a necessity, requiring the design of new cylinders, regulators, valves and related equipment.

A steam operated external energizer for cold weather engine starting was designed, consisting of a small automatically controlled steam generator weighing about 100 pounds and a steam-driven energizer.

Aerial Photography.- A self-contained photographic laboratory automobile trailer unit has been developed, having one room completely equipped for printing and one for film processing and print finishing. The Unit houses its own ventilating system, water supply, electric power plant, chemical and material supply, together with all photographic accessories necessary to produce complete mosaics wholly within the Unit. Much progress was made in the construction of photographic instruments of precision comparable to surveying instruments. The Aerocartograph and Multiplex Projector were tested out in the preparation of aerial maps.

Great progress has been made during 1936 upon the completion of the Physiological Research Laboratory. Equipment was gradually obtained and additional experiments performed. One of the principal projects was the investigation of centrifugal force on pilots. The equipment consisted of a long rotating arm with a seat bolted to its outer end. Powered with a large electric motor, the arm is rotated at speeds up to 80 rpm., developing a force 20 times the pull of gravity. Laboratory members are acting as experimental subjects up to "8 G's" and experimental animals for the higher forces, where permanent injury may be produced.

Armament.- Nonconfidential armament projects under investigation included determination of limiting dimensions for turrets or inclosed cockpits for use of flexibly mounted guns; a control mechanism for bomb racks, by which bombs may be released at regular time intervals, thus producing a controllable spacing on the ground of successively dropped bombs; revision of fixed gun installations to increase number of bullets that can be fired in a given time, to compensate for the increased ground speed of the modern attack aircraft.

Aircraft Radio.- Further experiment with the radio compass to procure one which would prove satisfactory, reliable, and not too intricate from the maintenance point of view was a principal project. Progress was made in the development of a simple light-weight direction finder for pursuit airplanes. Tests of a loop wound around the engine cowl gave promise. A throat microphone was developed to replace the T-17 hand microphone. With this equipment which is strapped to the pilot's throat, the hands are left free for other purposes while transmitting.

Flight Testing.- In a year of accelerated procurement, and almost constant convening of evaluation boards, the Flying Branch has been a busy place. Complete performance testing of 8 Air Corps airplanes and 7 commercial airplanes offered in competitions was accomplished. Other miscellaneous tests of military and commercial airplanes numbered 46, besides which were the continuous project flight tests for the Aircraft, Power Plant, Equipment, and other engineering branches.

Field Service Activities.- The increased activity and mobility of GHQ added to the vast amount of routine detail handled by this Section. Outstanding among the year's activities, however, were the following projects.

Inter-depot transport operations were established with two new C-33 airplanes and a transport squadron assigned to each depot. This service proved most valuable and has alleviated the shortage of spare parts situation.

Work on the construction of a new depot at Sacramento, California, to replace the Rockwell Air Depot, was initiated. The new depot is to be finished about the end of the calendar year 1938.

An Engineering and Supply Conference was held in October after a year's lapse of this annual event. Limiting the attendance to depot and wing officials increased the effectiveness and control of the gathering. About 35 officers from other posts convened with Materiel Division officers at Wright Field.

Army Aeronautical Museum.- Several interesting and valuable exhibits were added during the calendar year and from the collection an Air Corps display was prepared for the Great Lakes Exposition at Cleveland which was an acknowledged success. The publication of the 8th edition of the Handbook of Instructions for Airplane Designers, completely rewritten, was a major project of the Editorial Unit. In addition to an almost continuous flow of press items, there was produced twice each month, "The Technical Data Digest", consisting of 48 pages of abstracts from current aeronautical publications. Furthermore, 24,000 photostats and 19,000 photographic prints were turned out, and approximately 12,000 feet of motion picture film copied.

General Activities.- In a busy organization events are apt to crowd closely upon the heels of events. A greater number of evaluation boards congregated than during any previous year. The American Photogrammetry Society and the Air Transport Association held their annual meetings at the Division, Air Corps officers benefitting from the conference. Eight officers received awards of merit, five for courage under danger in connection with flight. Many lectures on Air Corps topics were delivered by Materiel Division officers and engineers before representative organizations, and thousands of visitors made the daily tours of Wright Field.

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NAVIGATION SCHOOL AT MITCHEL FIELD

The 9th Group Navigation School is scheduled to resume activities on April 5th, when a new class of four student officers will assemble daily to wrestle Old Man Mercator and his associates. The Group is now provided with twenty graduates of its own Navigation Unit and several graduates of the Langley Field and Rockwell Field Schools.

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NAVIGATION FLIGHT BY 97TH SQUADRON

By the Mitchel Field Correspondent

Bright and early on the morning of February 17th, the 97th Observation Squadron (Corps & Army), Mitchel Field, N.Y., left Mitchel Field, N.Y., bound for a three-day trip to Florida and Alabama for the purpose of training in Unit and Individual Navigation, familiarization with terrain and airports, and maintenance of airplanes away from the home field. Seven O-46A airplanes with the following personnel were taken: Captain A.J. Lehman, Lieuts. S.P. Wright, C.F. Damberg, T.S. Moorman, Cadets Wackwitz, Catlin and Burnham, Staff Sergeants Riviere, Pollack, Corporals Farmer, McCoy, Collins, Privates Placey and Ennis.

After several weeks of rain and snow, the morning of the 17th dawned bright and sunny. Aided by a tail wind, we made Langley Field in one hour and forty minutes and flew on to Pope Field, arriving at 11:50 a.m., or two hours and fifty minutes' flying time for the 510 miles to Pope Field. The Squadron was divided into three flights.

From Fort Bragg we flew to Jacksonville, where we staked down our ships and were driven into town to the Roosevelt Hotel. After dinner, we took up a strategic position in the third and fourth rows of the "Florida Theatre."

On the 18th we flew to Maxwell Field, the route lying over some of the wettest country we've ever seen. We landed at Maxwell Field about 11:30 a.m., and were much impressed by the layout of the landing field and buildings. No two-mile jaunts from one end of the flying line to the other there.

Very early on the morning of the 19th, the Squadron left Maxwell Field for Atlanta, where we were forced to lay over for two hours because of bad weather ahead. We finally got away and arrived at Pope Field at about three o'clock, having lunch there on crackers and milk. A short jaunt to Langley Field - refueling, and the final leg to Mitchel Field. Darkness caught us en-route, and we landed at Mitchel Field at 6:30 p.m.

Having flown several thousand miles in three days - four or five hours a day - the absence of maintenance trouble was most complimentary to the O-46A airplane. Of interest to the statistically minded are a few figures relating to speed and gas consumption, viz: Total distance covered, 2118 miles; flying time, 14 hours and 40 minutes; average ground speed, 144.49 m.p.h.; average gas consumption, 32.6 m.p.h. The cruising r.p.m. never exceeded 2,000, or approximately 60 percent of available power. The cruising altitude varied from 2,000 to 4,000 feet.

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CHIEF OF STAFF COMMENDS PANAMA FLIGHT

In a letter to Major General Frank M. Andrews, commanding the GHQ Air Force, the Chief of Staff of the Army, General Malin Craig, stated:

"The flight of the 96th Bombardment Squadron from Langley Field to Panama and return was well planned and has demonstrated that our Army navigators are thoroughly capable of navigating our airplanes over extensive stretches of water. I have read your report with great satisfaction." General Craig extended congratulations to the officers and enlisted men participating therein.

"CHOW CALL"

By the Bolling Field Correspondent

NAPOLEON had no conception of airplanes or their value in peace and war. Nor did he know that thousands of men would sometime comprise that all important branch of the service - the Air Corps.

And so - the Air Corps - thus being a part of the Army, is included (and heartily agrees) in Bonaparte's well-known and oft repeated saying - "An Army marches on its stomach."

Under the supervision of its mess officer, 1st Lieut. Arnold L. Schroeder, Air Corps, the Bolling Field consolidated mess is operated with efficiency, cleanliness and dispatch by Mess Sergeant (Staff Sergeant) O.E. Johnson, and a competent staff, including Sergeant George G. Long, Assistant Mess Sergeant; ten cooks; two bakers and two clerks.

The cafeteria system is used, and meals are served for one and one-half hours, that is, breakfast from 6:00 to 7:30, etc., in a well ventilated dining room equipped with 34 four-place tables. On the walls and posts are hung replicas of the various Air Corps squadron and school insignia, thus adding a cheerful though not blatant color to the surroundings.

The latest type of equipment is conveniently installed in the kitchen. Electric coffee grinders, meat slicers, mixing machines and refrigerators all do their part toward minimizing in time and labor the task of preparing a well balanced and well cooked meal.

The old army dread of doing "K.P." is also practically eliminated through the use of electric potato peelers and dish-washing machines, and five handy sinks connected to boiling hot water.

The food is prepared in the newest type ranges, steam kilns, cookers and broilers and then placed over steam heated counters where it is kept hot while being served during meal hours.

The cafeteria system is most practical, because Air Corps duties are such that certain groups of men must eat at varied hours, and thus 450 men are easily served at places accommodating but 154. Little, if any, delay is experienced at the serving tables, and it takes only six minutes for a group of 25 to go through the line, from the time they pick up their trays to having them filled.

Two 30-gallon coffee urns are used, and the serving counter is also equipped with two gas-operated toasters, as well as ice cream compartments and water coolers.

Lieut. Schroeder says: "The morale of any group of men varies directly with their satisfaction with the food they eat. Since I have been Mess Officer at Bolling Field, my main concern has been to operate our Mess in such a manner that our men would be, in every respect, more than satisfied. Any success that has been attained is due to the efficiency and splendid spirit of cooperation shown by all the men working in our Mess."

A sample of the Bolling Field menu follows:

Breakfast: Corn cakes, pork sausages, syrup, fresh apples, fresh milk, oatmeal, bread, butter, and coffee.

Dinner: Cream of tomato soup, Virginia baked ham, sweet potatoes, bread dressing, stewed tomatoes, buttered carrots, fresh celery, ice cream, cherry cake, bread, butter, coffee and milk.

Supper: Roast beef, mashed potatoes, vegetable gravy, cole slaw, bread, jelly, tea and milk.

With such menus and with such modern equipped kitchens in which they are prepared, it can safely be wagered that - were the great General to come back to earth today he would readily amend his remark to "An Army marches AND FLIES on its stomach."

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18TH RECONNAISSANCE SQUADRON INSIGNIA

The insignia of the 18th Reconnaissance Squadron, GHQ Air Force, was approved by the War Department on February 9, 1937, and is now being painted on the equipment. The design is a yellow equilateral triangle, one point down, with a silver border. Superimposed on this triangle is a sphere under a winged eye. Both are blue. Coming from the eye are nine silver rays spreading fanwise over the sphere which terminate at the border. Heraldry being what it is, the design of the insignia describes perfectly the function and scope of the Squadron's activities.

The 18th Reconnaissance Squadron is stationed at Mitchel Field, L.I., N.Y.

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RECRUITS FOR BOLLING FIELD

An extensive recruiting program in the Third Corps Area is bringing many recruits to the Air Corps, and especially to Bolling Field, D.C. A "recruit training period" of from six to eight weeks is given the new men before they are turned over to various duties on the field. It is noted that the majority of newcomers are exceptionally well educated, and therefore most apt to cope with the intricate duties of the Air Corps.

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Brigadier General Gerald C. Brant has been relieved from the command of the 3d Wing, GHQ Air Force, Barksdale Field, La., and assigned to the command of the 2nd Wing, Langley Field, Va., March 19, 1937.

HEROIC ACTION OF TWO CIVILIANS SAVES LIFE OF PILOT

During the investigation of the airplane accident which occurred at Bernard Airport, Youngstown, Ohio, on February 7, 1937, and in which the pilot, 2nd Lieut. J.C. Ziler, Air Reserve, was injured, it developed that Messrs. P.C. Boyer and R.F. Thomas, both of Youngstown, Ohio, were instrumental in rescuing the pilot.

In a communication forwarded to the Commanding Officer, 1st Pursuit Group, Selfridge Field, Mich., Major John G. Williams, Air Corps, stated:

"Judging from the testimony obtained, Mr. Thomas was the first to reach the crash. While he was attempting to remove the pilot, Mr. Boyer arrived. Mr. Thomas lifted a wing and disengaged the pilot sufficiently to permit Mr. Boyer to pull him from the burning wreck. Although neither of these men were burned, the rescue was made at considerable risk, as the airplane contained three fuel tanks, each taking fire separately, and also equipped with flares which ignited during their rescue attempts.

Neither of these men knew each other and did not recognize each other until testimony was being obtained from Mr. Thomas. Mr. Boyer was present when Mr. Thomas was being interviewed and remarked that now he knew whose legs they were that he had seen. It appears that Mr. Boyer was so intent on helping to remove the pilot that he saw only the legs of the man that was helping him, both losing each other in the crowd that gathered quickly.

Some idea of the strain under which these men worked may be realized from the following incident. The office of the airport hangar is heated by a coal stove. Being temporarily out of coal, one of the attendants was burning old oil, placing it in a can and throwing the can in the fire. While interviewing Mr. Thomas, one of these cans hissed and popped, and Mr. Boyer started for the door, checked himself and remarked that it sounded like one of those flares exploding.

Their prompt action without doubt saved the life of the pilot."

The Commanding Officer of the First Pursuit Group, Lieut. Ziler's organization, in a letter to each of these two Youngstown citizens, commending them for their action in the emergency cited above, stated, in conclusion, as follows:

"Your action saved the life of Lieut. Ziler. Kindly permit me to extend to you on behalf of Lieut. Ziler and his brother officers of the First Pursuit Group the sincere appreciation and thanks from the entire command.

Should you ever be in the vicinity of this station, you are heartily invited to visit this station so that the officers of the command may have the opportunity to meet you.

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LIEUT. MALCOLM SAVES CHILD FROM DROWNING

Second Lieut. Marion Malcolm, a member of the 94th Pursuit Squadron, Selfridge Field, Mt. Clemens, Mich., received the plaudits of his fellow officers following his heroic plunge into the icy waters of Anchor Bay on the afternoon of March 3rd to rescue the four and one-half year old daughter of the Commanding Officer of the 94th, Captain Leo H. Dawson.

The rescue by Lieut. Malcolm, made shortly after Mrs. Henry B. Clagett, wife of the Commanding Officer of Selfridge Field, rushed into the Officers Club and reported the mishap, was completed with the aid of officers who formed a human life-line across the ice.

Lieut. Malcolm ran from the club to the lake, taking off articles of his uniform as he ran. A few feet from shore the ice gave way beneath him and he was plunged into the icy water. Swimming the remainder of the distance, he found the small girl floating face down about 80 feet from the shore. After returning her to the edge of the ice layer, he handed her up to the first man in the line of officers which had formed across the ice to assist him. Lieut. Malcolm was assisted from the water while the girl was rushed to the Selfridge Field hospital. Although half unconscious, she was revived at the hospital and returned to her home in the evening.

Commenting on this incident, the Mt. Clemens DAILY LEADER stated:

"The heroic action of Second Lieutenant Marion Malcolm, of the 94th Pursuit Squadron, Selfridge Field, in saving the daughter of his commanding officer in Anchor Bay is typical of the spirit of the Air Corps and the men included in its personnel. Lieut. Malcolm's feat brings not only personal congratulations from the Daily Leader, but congratulations to the entire Air Corps department for training which develops in its young men the desire to give service to their fellowmen at all times regardless of personal danger. * * *

To Mrs. Henry B. Clagett, wife of Col. Henry B. Clagett, commander of Selfridge Field, go congratulations as glowing as those to the rescuer. It was Mrs. Clagett's immediate insight into impending tragedy and instant response to the demand for assistance which made the rescue possible. Were it not for her cool-headed action in calling aid, the incident might have resulted in tragedy.

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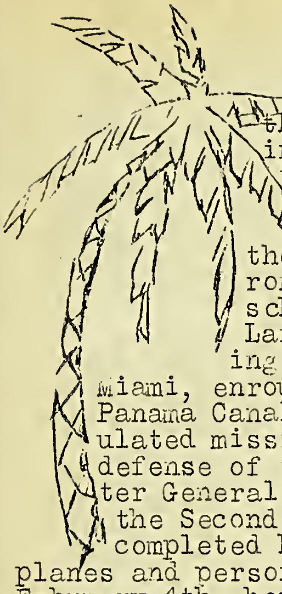
HIGHLIGHTS OF THE LANGLEY FIELD - PANAMA FLIGHT

By Major Jasper K. McDuffie, Air Corps



Have you ever flown a thousand miles over water in a land plane and then turned around and retraced your steps? The nine B-10B Bombers of the 96th Bombardment Squadron, GHQ Air Force, were scheduled to take off from Langley Field on the morning of February fifth for Miami, enroute to Albrook Field, Panama Canal Zone, on a routine simulated mission of assistance in the defense of the Canal Zone. Soon after General H.C. Pratt, commanding the Second Wing, GHQ Air Force, had completed his inspection of the planes and personnel on the morning of February 4th, however, forecasts of poor flying weather for the following morning began to pour in. A hasty weather conference was called for one o'clock that afternoon. Meanwhile, the 96th Squadron was told to prepare for a possible take-off early in the afternoon. At the conference it was decided to send the Squadron to Spartanburg, S.C., at once in an effort to get behind the bad weather.

From that moment until the take-off, there was a mad scramble of both officers and men to pack their clothing and obtain money with which to pay their expenses while enroute. These things are always put off until the last minute. A few people found that their suits were still at the tailor's, but General Andrews, who commands the GHQ Air Force, took these articles with him when he flew down to Miami the following day to wish the 96th personnel bon voyage on their over-water hop.

About an hour after leaving Langley Field, the flight began to wonder if Captain "Pinky" Williams, the meteorological officer, had recommended sending them to Spartanburg to avoid bad weather or to test them in instrument flying through snowstorms. The further the Squadron went the thicker the snow became, finally totally obscuring the ground and making it necessary to rely entirely on instruments. However, Major McDuffie had tuned in his radio on Spartanburg and knew that there was good weather somewhere ahead. The flight broke through the snow about fifty miles from Spartanburg directly on its course and had left behind all of the bad weather for at least the next six days.

On February 5th, the Squadron proceeded to Miami without incident and at once prepared the planes for the long hop to Panama. At 4:45 on the morning of the 6th, the telephones throughout the hotel began ringing, and the flight personnel had started another day. Clothes were hastily packed, breakfast was grabbed while discussing the weather reports and forecasts, busses were caught at six o'clock, and the ten-mile ride to the airport was begun. Then motor covers were pulled off, and the motors started to warm up while leather jackets and summer flying suits were donned. Winter flying clothes had been stored the preceding night as useless in the warm air between Miami and Panama. For the next few hours, however, everybody was longing for the warmth of those same discarded suits.

Finally, everything was set. The nine Bombers moved out in single file and rose easily into the air with their 4500 pounds of gasoline. As they climbed in large circles up to 6,000 feet, they passed over Chapman Field at eight o'clock headed on the course. From that time until Panama was reached, the order was to hang back on the throttle and conserve gasoline. It might be needed.

The Squadron was just an hour behind the slower flying Amphibian, the "Duck," which was making the same flight as a safety plane in the event one of the Bombers was forced down into the water. Incidentally, every plane carried collapsible rubber life rafts, drinking water, canned tomatoes, corned beef, malted milk tablets, chocolate bars, and even jungle kits with bolos and mosquito head-nets.

Cuba was crossed in the thirty minutes just after nine fifteen, at which time everyone took a real good look at the last land they expected to see before reaching Panama. Drift and ground speed were carefully checked by the navigators in the three flight leaders' planes while they still had good solid ground to get accurate readings from. Then Cienfuegos faded behind. Afterwards the navigators could use only the white-caps of the wind-swept Caribbean with which to reckon their drift and ground speed. But, of course, as good navigators, they took plenty of shots to verify their positions.

Gradually the broken clouds forced the planes higher, and at the half way mark the Bombers were at 8,000 feet, when inquisitive eyes which had been watching the white-caps and clouds began searching for the Amphibian which was flying along below the clouds and about 500 feet above the water. Sure enough, their curiosity was satisfied. There below and to the right was the "Duck" lumbering along at a hundred and ten or fifteen miles an hour. It was possible to watch it for five minutes or more through the breaks in the clouds and then it was gone. After that it was the same old thing of looking at the clouds, or taking glimpses of the water, or wondering where the sharks were thickest or, as some of the more comfortably fixed mechanics could do, lie back on their soft kapok life preserver cushions and read of bold adventure on the arid plains of the old West.

Too much comfort cannot last, and soon the clouds became solid and forced the planes higher and higher until finally they were just above the 13,000-foot level. Here it was too cold to lie back and relax. More thought was given to the nice warm winter flying suits which had been left behind at Miami. And here no drift readings could be taken from the water. More and more often the three navigators took sun shots and compared notes for lack of something to do. But at about one fifteen the Squadron had passed beyond the wind shift line and again was able to drop down to the 7,000-foot level where, although it was not so cold, it was still considerably chilly. The clouds became broken. New drift sights were taken and ground speeds computed.

According to the figures, the flight was nearing the coast of Panama around three o'clock when it was decided that it was better to go down through the clouds while still over water rather than wait for the hilly terrain of Panama to greet the planes as they emerged through the clouds. Consequently the noses were pushed over, and at 1,700 feet the clouds were above and the water was below. In a few minutes the green hills in the vicinity of historic old Porto Bello could be seen off to the left thrusting their round heads up into the clouds. Then almost directly ahead Minas Bay appeared. In just a few more minutes the planes had thundered on across the Isthmus to Panama City and were circling for a landing at Albrook Field, 1170 miles from Miami. It was the first mass flight of land planes ever to attempt the crossing.

At Albrook Field, General Brett, who commands the 19th Composite Wing, and Colonel Weir, commanding Albrook Field, quickly took over the servicing of the planes for the return flight and the assignment of officers and men to quarters. Before all of the personal baggage could be collected, the depleted gas tanks had been filled. Work was then called off until eight o'clock Sunday morning. But by noon on Sunday, all of the planes except one had completed the maintenance inspections and minor adjustments on engines and accessories. Before two o'clock the last plane had been tuned and was ready for the flight back to Miami.

The arrival of the flight at Albrook Field was coincidental with the festival week in Panama. Consequently, there was an added air of jollity combined with the warm comradely welcome and hospitality of the Albrook Field personnel. The people on the flight, the people of Albrook and France Fields, the native Panamanians, and the ever present tourists made a noisy, pleasant crowd. Neither the officers nor the enlisted men could praise enough the service and treatment given them.

After a day of rest on Monday, the Squadron lifted the heavily laden planes from Albrook Field at seven-forty on Tuesday morning. The breakwater at Colon was crossed again approximately an hour behind the "Duck", which was already winging its weary way back across the water.

Head winds were forecast for the greater part of the return trip, and it was apparent that for safety the flight should conserve all the gasoline possible, although there had been an ample amount left in the tanks at the end of the outbound trip. Consequently the motors were throttled back and the planes eased along at 1800 feet just below the clouds. Now there were no holes in the clouds to look down through, and nothing to see except water. But what water! Stirred up and maddened by a 37-mile north-northeast wind, there were white-caps everywhere. Visibility was none too good and the Squadron shoved along monotonously hour after hour with yet more monotonous hours in view, except for the one break of passing the "Duck" which was offering its moral support and friendliness. There was nothing to do but listen to the hum of the motors and look at the waves.

Suddenly everyone was wide awake; not only awake but keyed up and on their toes. A radio call from Captain Cousland, piloting Number 90, started it. His left motor was dead! He couldn't hold his altitude with the right motor. It was over-heating badly. Apparently he was going to have to put his heavy land plane down on the rough waves of the Caribbean at exactly the greatest distance from land. Could he get away with it? Could he make a safe landing? Could even the "Duck" make a safe landing in such rough water? Could it pick up the four people in the disabled bomber? Could it get off the water with them? There was hardly a possibility of it. They would have to drift around and test out their safety equipment and emergency rations.

Quickly, Numbers 41 and 43 were detailed to stand by No. 90 until the "Duck arrived. They dropped back. At the same time, the long-range radio set started to hammer out its message to the "Duck" and to land stations. These had been prearranged for just such an emergency.

In a minute someone called that he did not believe No. 41 understood the orders to stand by; that he was coming on behind the flight. No. 41 replied that he understood, but that the "Duck" was approaching only a short distance away and could surely see No. 90, as he was headed right for it.

Just then No. 92 called to say that No. 90 had landed safely. It did not seem possible. It was not a question of Cousland being either awfully good or awfully lucky. He had to be both. A repeat was asked for on the message. Again No. 92 said that No. 90 had landed safely and his mechanic had seen the splash as the plane hit the water. There was nothing the flight could do; it was up to the "Duck" from there on. The eight remaining planes were counted and put back on the course to Cienfuegos.

What was that? Someone had called that there was a single plane about 45 degrees behind the Squadron on the right. He must be foolish. But sure enough, there was a plane which was seen only faintly through the lower fringes of the clouds. Who could it be? Cousland was in the water and the "Duck" was with him. Certainly, there were no strangers flying around in the middle of the Caribbean. The Squadron turned slowly to get in front of the stranger and gave him a radio call, telling of their relative position. A couple of minutes more and No. 90 was calling to say that he was rejoining the formation. You couldn't believe your ears. Was somebody crazy? Why he was lucky to have landed without cracking up and he couldn't have lifted that plane out of the water with a derrick. But take a count of the planes. That cannot be right; count them again. Still the answer was nine. Oh, well; possibly the days of miracles are not over. But when the details came in, the answer was simple.

Dropping slowly down with one motor Captain Cousland struggled and struggled to get his left motor going again. When he had dropped to 600 feet a quantity of black oily "goo" bubbled from his exhaust. Then the motor started with a roar. Do you wonder what his thoughts were as he dropped down and as he slowly climbed back up into position? As he reached his lowest point it looked as though the plane was right on the water. The mechanic in No. 92 had mistaken the the breaking of a big white-cap for the splash of the plane in landing.

Later, safely on the ground, Captain Cousland was asked how long his left motor had been completely out. He answered with characteristic brevity and truthfulness:"Just exactly four thousand years".

That experience seemed to be enough for one day, because the clouds became more broken and the Squadron climbed up through them, finally reaching an altitude of 9000 feet on top. To show that fortune was again on the side of the planes, the strong head winds gradually changed to tail winds. Cuba was sighted in front and quickly left behind. Biscayne Bay was seen beyond the Gulf Stream clouds, and soon Miami loomed up straight ahead.

The grind was over. The Squadron was back safely. A mass flight of land planes had twice crossed the Caribbean between Miami and Panama without an accident - almost. That was the shameful part of it - that word, "almost". An accident was just ahead waiting for the unwary in order to mar an otherwise perfect flight.

On the previous Friday, the ground radio station at Miami had given the Squadron explicit landing instructions, including the runway to use, the direction of landing, the wind, and the parking area. Consequently, when the Squadron asked for landing instructions on Tuesday and was told that it would land in the same manner as on the previous visit, it was understood that the same runway was to be used and that the landing was to be made in the same direction as on Friday. But the ground station had intended these instructions to apply only to parking the planes in the same manner and in the same area as on Friday. As a result, the planes were brought in down wind.

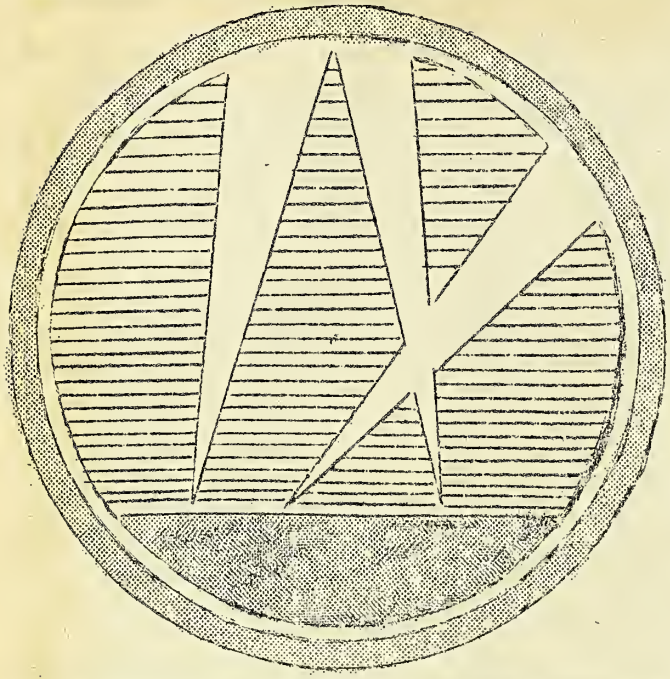
As he approached the runway, Major McDuffie, who was piloting the leading plane, realized that an error had been made. He opened his throttles sufficiently to keep his plane in the air,at the same time calling to the others planes not to land but to stay in the air. The second plane did not receive this message and did not see the lead plane continue on across the field. It had lost so much flying speed that the pilot was afraid to open his throttles for fear that he could not clear the wires at the far end of the runway and would crash into the automobiles parked at that point. Rather than endanger these people,he chose to complete his down-wind landing, hoping to "ground-loop" at the end of the runway when the plane had slowed up sufficiently. But when he did "ground loop", the speed of the plane was still too great and the landing gear crumpled as the wheels hit the soft sand.

All of the remaining planes continued across the field, turned around and landed in the opposite direction.

The planes were held on the ground at Miami on Wednesday because of poor flying weather - it was reported from Titusville that even the birds were walking to their shelters that day. But on Thursday, the Squadron was again up and away, nosing its planes through the low flying clouds and light rains. The planes were forced to stay below 500 feet for the first two hours and often were forced down to 300 feet. However, after plugging along against a strong north wind, the planes prevailed over the rain and clouds and emerged into bright sunshine near Jacksonville. From

(Continued on page 10).

NINTH BOMBARDMENT SQDN., HAMILTON FIELD



HISTORICAL RECORD: Organized as the 9th Aero Squadron from Co. "E," Provisional Aviation School Squadron, May 31, 1917, at Kelly Field, Texas. Opened Selfridge Field July 5, 1917, with the 8th Aero Squadron and there assembled the first airplane to fly at that field. October 27, 1917, to Mineola, Long Island. November 22, 1917, to Halifax via the "Carpathia." Trained by flights; "A" Flight to South Charleston with Sopwith Camels; "B" Flight to Scrampton, Lincoln, with scout planes; "C" Flight to Spittlegate with observation planes; "D" Flight to Harlaxton, Grantham, for motor instruction. February 8, 1918, reassembled and took over work of 24th Wing, 12th Group, Royal Flying Corps. At the beginning of the St. Mihiel offensive, the Squadron was organized for night flying and reconnaissance. First trip over the lines from Amanty, September 14, 1918. September 20, 1918, moved to Wavincourt and attached to the 1st Observation Group till the Armistice. After the Armistice assigned to the Third Army Air Service with the Army of Occupation in Germany. Inactive March 24, 1923. Active, April 1st, 1931, with Captain Leo F. Post in command, as part of the 7th Bombardment Group, March Field.

Transferred to Hamilton Field, Calif., as part of the 7th Bombardment Group, December 5, 1934. Captain Kenneth N. Walker is at present in command.

BATTLE HONORS: Entitled to silver bands on Guidon engraved: Lorraine, St. Mihiel, Meuse-Argonne.

DESCRIPTIVE INSIGNIA: Three tapering searchlight beams form the Roman Numeral IX, as well as signifying the three engagements during the World War. In the original design a war time Bombardment airplane was dropping bombs on a German village. Regulations governing insignia required the removal of the airplane and the village.

APPROVED INSIGNIA: On a black disc and within an orle of silver another disc divided per fess debased gray and black, on gray portion three piles arranged to form the Roman numeral IX in silver.

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The Flight to Panama and Return

(Continued from Page 9).

there on it was smooth sailing.

Leaving the true course at Charleston, Major McDuffie yielded to his vanity and led the Squadron across his home town of Marion, S.C., at two o'clock. Then the planes were put on the last lap for Langley Field. The final landing was made at three forty-five in the afternoon, just a week after the take-off for the tropics. The flight was over. The planes were put away to be groomed for more work. Everyone was glad to have made the trip. Everyone was glad to be home again.

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BOLLING FIELD OFFICER GOES TO ITALY

In compliance with War Department orders, Captain Jack C. Hodgson, Air Corps, will shortly be relieved as Operations Officer at Bolling Field, D.C., and will sail for Rome to take up the duties of Assistant Military Attache for Air to Italy.

Captain Hodgson will also serve in that capacity to Greece, making his headquarters in Rome and occasional official visits to Athens.

As a graduate of the Army Industrial College, Infantry School basic course, Air Corps primary flying course and Advanced Flying School Pursuit course, Captain Hodgson is well qualified for his new assignment. During his two years at Bolling Field, most of which time he was Operations Officer, he had become a familiar figure to Government officials as well as Army, Navy and civilian airmen.

Always ready and willing to give cooperation and personal suggestions to pilots arriving at and leaving Bolling Field, Captain Hodgson and his well known congeniality will be greatly missed, but he goes to his new work with the wishes of continued success and Godspeed from his host of friends both within and outside of the military service.

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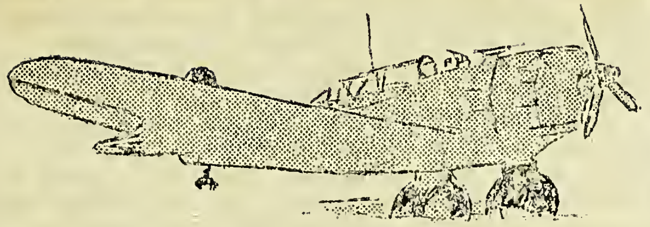
Captain Thomas D. White, Air Corps, whom Captain Hodgson is relieving as Assistant Military Attache for Air to Rome, Italy, is under orders for duty at the Air Corps Tactical School, Maxwell Field, Ala., in the 1937-1938 course.

PERFORMANCE OF A-17 PLANE ON SNOW-COVERED GROUND



An informal report on the performance of an A-17 Attack plane under the combined conditions of snow, high altitude and low temperature was recently rendered by 2nd Lieut. Noel F. Parrish, Air Corps, of the 13th Attack Squadron, Barksdale Field, La.

The performance of this test occurred through necessity and not through any prearranged plan, and hence there was no preparation. The locale of this test is described in the report, as follows:

Lonesome Valley is a small, mountain-circled plain near the center of the high plateau that is central Arizona. On the southwestern rim of Lonesome Valley, at an altitude of five thousand feet above sea level, is the Ernest A. Love Municipal Airport of the City of Prescott. It is a good airport, composed of firm, gravelly soil, and consisting principally of one broad runway almost a mile in length which slopes uphill toward the prevailing wind. The Department of Commerce reports "hangar and aviation fuel, day and night." But the aviation fuel has been discontinued and the best of three private hangars present is a box-car with one side knocked out. Useable facilities consist of two good wind-socks and one uninformed caretaker. However, the field is definitely sheltered from violent winds, and both rain and snow are rare.

Lieut. Parrish, accompanied by a mechanic, landed at the Prescott Airport on the morning of December 30th, last. Since information had been received that the field was covered with less than two inches of snow, no difficulty in landing or taxying was expected, and none was encountered. The temperature was well above freezing and the light snow showed no tendency to cling to the wheels. Clouds hung about the higher mountains, but the valleys were clear, and conditions appeared to be improving after three days of bad weather. The pilot consulted the local weather observer and was informed that the snow then present had been the heaviest fall in the past six years. Fair weather was predicted for the following day.

Three hours after landing, the sky had become overcast and the ceiling was dropping rapidly into the valleys. Take-off was inadvisable, so the plane was engine-covered and staked down for the night. During the night the sky cleared, but at daybreak clouds appeared and a light snowfall began which continued all day and night and became very heavy to the accompaniment of strong winds.

On the morning of January 1, 1937, the airport was covered with snow, the minimum depth of which was 18 inches. The snow was fresh and soft, so that a good automobile could proceed through it in low gear. The coverage was uniform, varying less than six inches, and there were no drifts.

Strangely enough, since the airplane had been faced directly into the wind, its own aerodynamic characteristics had, during the storm, kept it, and the space around and beneath it, almost entirely clear of snow. But this space was surrounded by a barrier of snow almost two feet in depth. The wings were covered with a thin coating of ice. It would have been difficult, though necessary, to remove this ice without damaging the finish. Fortunately, the temperature rose during the morning from 12 degrees above zero to a few degrees above freezing, and the ice coating melted. Ice in the carburetor bowl also melted, as had the ice on the ground, making it possible to free the wheels from the ground. The mechanic, after turning the propeller through by hand several times, was able to start the engine without difficulty.

On January 1st, low ceilings persisted, but it was thought possible to reach Phoenix - provided the airplane could be gotten off the ground - and thus avoid the possibility of more snow. Inquiry as to the possibilities of getting the field cleared revealed the fact that the almost unprecedented snowfall had created serious problems throughout the entire region. Mountain roads, including important highways, were blocked by deep drifts. Towns, communities, ranches, CCC camps, were isolated, and the few available snow plows were making desperate efforts to reach them. The best local comment was to the effect that the problem would remain for weeks, as would most of the snow, and possibly A-17 airplane No. 35-120.

The pilot at first believed that he would be unable even to taxi the plane through snow of such depth, but upon the mechanic's insistence the experiment was attempted. Surprisingly, the plane was able not only to drag itself through the stuff, but was able to do so at fair speed. Taxying uphill required almost full throttle, but less than three quarters throttle was required for downhill taxying. It appeared possible that a long downhill run might produce enough speed to free the plane from the snow.

Before such a run was attempted, it was necessary to establish the following facts by investigation and experiment:

1. The strong propeller blast required

for taxying even at slow speeds made it possible to keep the plane's tail down despite the tripping effects of the snow.

2. The streamline pants scooped up some snow, but there was no tendency for it to clog or bind the wheels.

3. Use of brakes had little effect in the snow, but the snow itself had a tremendous braking effect and could be counted on to stop the plane eventually, even though it was necessary to ease the throttle back slowly and cautiously to avoid nosing up.

4. Although runway and boundaries were completely obscured, a take-off route was selected and found to be free of hidden obstructions or deep drifts.

From the top of a small knoll at the west end of the field, the plane was driven at full throttle for more than half the length of the field. It attained a speed of probably fifty miles an hour early in its run, and that was all it could do. It was slowed down very gradually and finally run upon a small knoll at the lower end of the field to avoid cutting the throttle too rapidly and nosing up. The total run was almost a mile. The plane was immediately taxied back and another effort made, with the same result. Head temperature had risen to 250 degrees, so the engine was stopped to permit cooling while the pilot developed a new plan of action.

Two local pilots offered information and assistance. One offered to take down the fence and suggested taking off on the nearby highway, which had been cleared. But the highway ran across uneven ground and there was a slight cross-wind, so the pilot vetoed this suggestion out of consideration for women and children who were present.

Instead, it was decided to have three automobiles present plough up and down the take-off path in the hope of lessening the snow's resistance. Assistance was enthusiastic, and a narrow strip was soon well rutted for some distance. It was impossible by this method to pack the snow in any uniform manner, for the snow was so deep that one automobile stalled. But it was hoped that the airplane in trying to take off might roll in some of the interlacing ruts and gain a little speed. The airplane was taxied up and down a couple of times, after which it was necessary to stop the engine again to prevent high head temperatures.

Finally, ttwo more attempts were made which were slightly more encouraging, because plane and motor seemed faster, despite the difficulty of staying on the narrow path which was invisible from the cockpit. It was now getting late in the afternoon, and the snow was becoming somewhat bumpy. A small log was secured to a Ford V-8 and dragged up and down the path, but results were superficial.

On another attempt, one wheel was seen to rise slightly. During all these efforts it was necessary to keep the stick back somewhat to counter nose-heaviness, so flaps were used timidly lest they blanket the flippers. But on this attempt they were pumped well down.

After allowing the engine to cool, another and similar attempt was made with some hopefulness. But this time a strange thing happened. The airplane suddenly failed to gain even fast taxying speed. An increase in nose-heaviness was noticeable to the pilot, and the plane slowed down with embarrassing suddenness as the throttle was reduced.

Suspicions were confirmed when an inspection showed the wheels had been sliding through the snow during a part of the run and that the snow in the streamline pants had suddenly begun to act as a brake. With increasing difficulty, the plane was taxied to the parking space and staked down for the night. Inspection showed that the tire surfaces had been slightly scored in turning.

This sudden change in the effect of the snow was mystifying until it was noticed that the temperature had by this time dropped to well below freezing. The snow in the pants which, in a semi-melted state, had previously allowed the wheels to turn through it without appreciable friction, had begun to freeze, expand and tighten against the tire. Friction of the turning tire melted for a time the snow which touched it, but the mass was constantly freezing from the outside, changing into ice, expanding and pressing even more forcibly against the surface of the tire.

On the night of January 1st, an offer of the National Guard Commander to turn out the National Guard was declined. (The Commander was a war pilot.)

During the night the temperature dropped to one degree below zero. On the morning of January 2nd, the airplane's starter would not work. The airplane was covered with so heavy a frost that it made the radio antenna appear as large as a small rope. The mechanic turned the propeller through several times. The motor was cranked by hand and started in less than ten minutes.

By this time the temperature had risen to almost twenty degrees, and it was hoped that continued sunshine might result in a thawing temperature during mid-afternoon. An effort was made to clear the ice and snow from about the tires. This proved very difficult, indeed. It was necessary to chisel two inches of solid ice from the pants-enclosed surfaces of the tires. It was impossible to remove the pants without the use of a hoist or jack. No hoist was available, and the use of a jack was known to be dangerous. So two hours were devoted to prying and punching about the inner surfaces of the wheels, removing ice from beneath the pants in small chunks. Adobe mud from the Prescott field had frozen into the solidity of bricks and some of it could not be removed by any means available.

Finally, the wheels were almost free, and another take-off attempt was made. The snow had settled somewhat and lost a few inches of depth, but had perhaps become more firm and resistant. The first effort was discouraging, since the wheels were obviously binding already, due to the fact that the temperature had failed to rise above freezing.

Within five minutes, the plane could scarcely be taxied. Again the wheels were partially cleared and another take-off effort was made, with the same results. The wheels would begin to bind before the plane could be taxied into position on the pathway.

At this time information was received that Fort Whipple, Army Tubercular Hospital in Prescott, possessed a small snow plow which might possibly be borrowed. But this would require a day's delay. A final effort was planned. The plane was taxied into position at the steepest and most favorable portion of the pathway which had by this time been churned into a bumpy, rutted, irregular strip of snow, averaging a few inches less in depth than the fifteen to eighteen inches which still covered the rest of the field. Automobile tracks were made along one side of this path, so that the pilot could estimate its location more accurately. The wheels were again partially cleared. A faint uphill wind had arisen. Flaps were pumped down 20 degrees. As the plane started down the runway, the motor began missing slightly, but halfway down the stretch it picked up and gained a little speed. The pilot felt a slight buoyancy. He eased forward on the stick slightly, then back again. The plane bumped less forcibly, but the wheels, particularly the tail wheel, continued to drag in the snow for several yards. They they were free.

The run had been slightly more than half a mile, down a grade of 3% or more, carrying 110 gallons of gasoline.

No take-off would have been attempted had it not been known that the temperature at Phoenix, 80 miles away, was well above freezing, for the wheels were no doubt already beginning to freeze up again as the plane left the snow.

The Phoenix airport was circled several times to allow melting. The plane bounced a couple of times before landing to make sure melting had occurred. A few handfuls of snow were found in the pants, melting rapidly. There were also several handfuls of snow inside the tail and rudder.

Had no warmer temperature been available, perhaps the best alternative would have been to land under power in more snow and hope that the wheels would skid. The same difficulty might also occur from an accumulation of mud freezing inflight.

Each morning at Prescott the removal of the carburetor bowl plug disclosed ice. On the first day, this soon melted and ran out as water, but on the second day it failed to melt even after the engine had been warmed up. Lacking hot water, the problem of removing it was a serious one. The drain plug hole was finally bored clear with a screwdriver.

The plane developed an intermittent miss which grew steadily worse after leaving Prescott. At Phoenix the lower plugs were removed and most of them found to be oily. The mechanic thought this condition might have been aggravated by low temperatures. Even after new plugs had been installed, when the plane was started at Albuquerque after storage in an unheated hangar with the temperature a few degrees above zero, the bottom cylinders failed to fire at first and threw so much raw gas into the exhaust pipes and under the cowling that it seemed a fuel line had broken. However, these cylinders soon picked up and ran well.

On the return trip across northern Arizona, near zero temperatures were encountered in flight and it was impossible to prevent the head temperatures from falling below 200 unless the altitude control was used. It was necessary to maintain considerable throttle during any long descent to prevent rapid loss of head temperature and poor engine performance.

The "outside temperature gauge" in the cockpit sometimes read well above temperatures reported along the route, particularly when the sun was shining on the plane.

Conclusions.

1. Landing in deep snow with an A-17 airplane would be very difficult, but might be performed without nosing up by skillful and plentiful use of the throttle at the right moment with the stick well back as the wheels entered the snow, and by slowing down gradually.

2. Snow will not seriously bind the wheels of an A-17 airplane with pants while the temperature is above freezing, but when the temperature is below freezing, soft snow will, by a process of packing, melting, and freezing again, develop a pair of self actuating ice brakes in less than a minute of taxying which will completely lock the wheels. Such a condition would cause almost certain disaster if a subsequent landing were attempted without thawing.

3. Brakes are not effective on a slick-tired airplane in soft snow.

4. The A-17 will start with surprising ease and will perform commendably well in very chilly weather.

5. An ice coating can be completely and safely removed from an airplane only by thawing.

6. An A-17 will take off at 5,000 feet through half a mile of churned snow more than a foot in depth - provided everything

else is just right. However, the process of getting everything else just right, while in no way damaging the airplane, is a considerable strain on the crew.

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NEW STUDENTS FOR AIR CORPS TECHNICAL SCHOOL

Under Special Orders of the War Department, recently issued, the following-named Air Corps officers have been assigned to duty as students at the Air Corps Technical School, Chanute Field, Rantoul, Ill., to pursue various courses of instruction, viz:

Airplane Maintenance Engineering

1st Lieut. Charles B. Dougher, Mitchel Field, NY
1st Lieuts. David R. Gibbs, Thetus C. Odom, 2d Lieut. Russell L. Waldron, Langley Field, Va.
1st Lieut. Louis A. Guenther, Brooks Field, Tex.
1st Lieut. Frank G. Jamison, Selfridge Field.
2nd Lieut. Lawrence S. Fulwider, Fort Leavenworth, Kansas.
1st Lieut. Richard M. Montgomery, Chanute Field.
2nd Lieuts. Byron E. Brugge and Jack E. Shuck, Hamilton Field, Calif.

Communications

1st Lieut. Carl F. Damberg, Mitchel Field, N.Y.
1st Lieut. Edward J. Hale, Maxwell Field, Ala.
1st Lieut. William R. Morgan, Randolph Field, Texas.
1st Lieut. Samuel A. Mundell, Panama Canal Dept.
1st Lieut. Travis M. Hetherington, Chanute Field, Ill.
2nd Lieuts. Jasper N. Bell, George B. Dany, Douglas W. Smith, John W. White, March Field, Calif.

Armament

1st Lieut. Melie J. Coutlee and 2nd Lieut. Charles H. Leitner, Jr., Barksdale Field, La.
1st Lieut. Jarred V. Crabb and 2nd Lieut. Eugene Brecht, Jr., Selfridge Field, Mich.
1st Lieut. John C. Horton, Randolph Field, Tex.
1st Lieut. Stanley R. Stewart, Brooks Field, Tex.
2nd Lieut. Thomas F. Langben, Mitchel Field, N.Y.
1st Lieut. William L. Travis, Mitchel Field.
2nd Lieuts. William M. Gross and Joseph C. Moore, March Field, Calif.

Photographic

1st Lieut. Jerald W. McCoy, Kelly Field, Texas
1st Lieut. Donald L. Hardy, March Field, Calif.
2nd Lieut. Hilmer C. Nelson, Mitchel Field, N.Y.

Officers assigned for duty as students in the Airplane Maintenance Engineering course are under orders to report to the Commandant of the Air Corps Technical School not later than Aug August 15, 1937, with the exception of Lieut. Montgomery, who is to report August 30, 1937; Communications course, date of reporting for duty, September 19, 1937, with exception of Lieuts. Mundell and Hetherington, who are to report October 4, 1937; Armament course, date of reporting for duty, November 15, 1937, with the exception of Lieut. Travis, who is to report December 1, 1937; Photographic course, date of reporting for duty, August 23, 1937.

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Lieut. Colonel Ralph Royce, who has commanded the 1st Pursuit Group, Selfridge Field, Mich., for a number of years, is under orders to proceed to the Philippines for duty.

PURCHASE OF AIRCRAFT ENGINES

The Secretary of War, Hon. Harry H. Woodring, announced on March 6th the purchase from the Wright Aeronautical Corporation, Patterson, N.J., of 141 Model R-1820-49 geared cyclone engines. The total amount of the contract is $1,099,729.50.

Of these engines, 109 are being provided for installation in a similar number of O-47A Corps and Army Observation airplanes being constructed by the North American Aviation, Inc., Inglewood, Calif., the announcement for contract of which was made on November 19, 1936. The remaining 32 engines are provided as spares.

The engines being purchased are of the single row radial type, developing 1000 horsepower for take-off and 800 h.p. at 4,000 feet and 2,100 r.p.m.

Prior to awarding this contract, this engine was subjected to the rigid type test made by the Air Corps Materiel Division, Wright Field, Dayton, Ohio, and proved to be highly efficient and reliable.

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NEW COMMANDER FOR SECOND BOMBARDMENT GROUP

A new hand is at the controls of the Second Bombardment Group, Langley Field, Va., in the person of Lieut. Colonel Robert Olds, who has succeeded in this position Lieut. Colonel Charles B. Oldfield, now on leave and soon slated to assume command of all Air Corps activities at Fort Lewis, Wash.

Colonel Oldfield, a native and former civilian resident of Norfolk, Va., served in the Army in many capacities before he assumed command of the Second Bombardment Group a few years ago. During the operation of the Air Mail by the Air Corps in 1934, he was on the staff of Brigadier General Henry H. Arnold, then commander of the Western Zone. Before coming into the Air Corps in 1920, he served in the Infantry for eight years, passing from private to the temporary grade of Major in that period.

Colonel Olds' assignment prior to assuming command of the Second Bombardment Group was that of Assistant Inspector, GHQ Air Force, Langley Field. A native and former resident of Woodside, Md., he enlisted in the Air Reserve three months before hostilities. He was commissioned a 1st Lieut., Aviation Section, Signal O.R.C., June 25, 1917, and promoted to Captain, September 3, 1918. Appointed a 1st Lieut., Air Corps, Regular Army, July 1, 1920, and promoted to Captain the same date, and to Major, August 1, 1935. He was promoted to the temporary rank of Lieut. Colonel, August 27, 1936. He graduated from the Air Corps Tactical School in 1928, and from the Command and General Staff School, Fort Leavenworth, Kansas, in 1935.

Colonel Oldfield graduated from the Tactical School in 1931, and from the Command and General Staff School in 1933, and completed his flying training in 1921.

Both Colonels Oldfield and Olds are on the General Staff Corps eligible list.

FAST TRAVELING FOR CHIEF OF GHQ AIR FORCE

Covering every one of the three wings of the General Headquarters Air Force in less than 18 hours' elapsed time, Major General Frank M. Andrews, commander of that organization, flew his Douglas transport "flagship" from March Field, Riverside, Calif., to Langley Field, Va., headquarters of the Air Force, in 14 hours and 39 minutes actual flying time. General Andrews landed at Langley Field at 2:34 o'clock on the morning of February 26th.

Departing from March Field, the headquarters of the 1st Wing, at nine o'clock E.S.T., on the morning of February 25th, General Andrews arrived at Biggs Field, Fort Bliss, El Paso, Texas, at 12:45 p.m., E.S.T., and lunched there. Between 2:00 and 5:00 p.m., E.S.T., that day, he flew between El Paso and the headquarters of the Third Wing, GHQ Air Force, at Barksdale Field, Shreveport, La.

Still following the southern route, General Andrews departed from Barksdale Field at 6:15 p.m., E.S.T., arriving at Lawson Field, Fort Benning, Columbus, Ga., at 9:30 p.m., E.S.T. Leaving the home of the Infantry School at 10:45 p.m., E.S.T., he arrived at Langley Field at 2:34 a.m., as above stated.

Colonel Hugh J. Knerr, Chief of Staff of the GHQ Air Force, pointed out afterwards, in a statement to the press, that the flight demonstrated how quickly the command post of the GHQ Air Force can be shifted from coast to coast in case of an attack on the continental United States. Most of the airplanes with which the GHQ Air Force will be equipped by the close of 1937 have cruising speeds enabling them to duplicate this feat, Colonel Knerr stated.

Accompanying General Andrews on this flight was Brigadier General Delos C. Emmons, Commander of the First Wing of the GHQ Air Force, March Field. He paid his first visit to Langley Field since his return from the Hawaiian Islands in June, 1936. He commanded the 18th Composite Wing at Schofield Barracks, T.H. An eleven-gun salute was tendered him at 11:00 o'clock, February 26th.

The purpose of General Emmons' visit to Langley Field was to discuss Air Force matters and to observe Langley Field training methods. On the morning of February 26th, General Andrews held a long conference with General Emmons; General Pratt, Commander of the Second Wing at Langley Field; Colonel Walter R. Weaver, commander of the Langley Field Air Base, and high ranking members of the GHQ Air Force staff.

While at March Field, General Andrews observed the performance of the Boeing B-17 Bombardment plane, which was temporarily used by the 19th Bombardment Group at the Pacific Coast station for a few days. The plane, which is manufactured in Seattle, Wash., arrived at Langley Field, where it will be used by the Second Bombardment Group. It has four motors and is one of the largest combat planes ever made for the Army.

Other passengers in General Andrews' plane on the eastward flight were Major Clements McMullen and the usual crew of enlisted men.

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AIR CORPS RESERVE UNIT AT BOLLING FIELD

Captain H.R. Baxter, Air Corps, the Post Inspector of Bolling Field, is also the Unit Instructor for the officers of the Air Corps Reserve in the Washington District.

With the approach of more favorable flying weather, Captain Baxter contemplates an effort on the part of twenty odd officers to equal in practice by actual pilotage and observation the valuable theoretical instruction they have received during the months of cold and inclement weather.

During the past few weeks, many applications for commission have been received, and Captain Baxter has been conducting written and flying examinations as often as the tasks of his other duties will permit.

The Air Corps Reserve regular monthly meetings and instruction courses are conducted on the first Tuesday of each month in the projection room of the Munitions Building, located at Constitution and 18th Street, and at least one guest speaker is always present. As the speaker is generally an officer or civilian directly connected with or otherwise interested in aviation, the talks are always interesting and entertaining.

A cordial invitation is extended to Reserve officers of all branches and from all districts who may be sojourning in Washington to attend these meetings.

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TURKISH OFFICIALS VISIT BOLLING FIELD

Major Samuel C. Eaton, Jr., and Captain Jack C. Hodgson recently escorted several officials of the Turkish Government on a tour of Bolling Field. The visitors had an opportunity of viewing many different types of Army and civilian airplanes, due to a large number of visiting planes to the field and to the Department of Commerce hangar on that particular day, and they expressed their admiration of the efficiency with which Bolling Field is operated.

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Special Orders of the War Department recently issued relieve Colonel Frederick L. Martin, Executive, Air Corps Materiel Division, Wright Field, Dayton, Ohio, and assign him to station at Barksdale Field, Shreveport, La., for duty with the Third Wing, GHQ Air Force.

1893

BIOGRAPHIES

LIEUT. COLONEL HUME PEABODY

Lieut. Colonel Hume Peabody, now on duty as Executive and Operations Officer of the 18th Composite Wing, Fort Shafter, T.H., was born November 24, 1893, at Shinglehouse, Pa. Graduating from the U.S. Military Academy, West Point, N.Y., June 12, 1915, he was commissioned a Second Lieutenant and assigned to the 3d Cavalry. He served with his regiment in the Brownsville, Texas, District, from September 12, 1915, to March 15, 1917, and participated in skirmish with bandits at Tahuachal and at Villa Verde Ranches, Mexico, June 17-18, 1916. He was stationed with his regiment at Fort Sam Houston, Texas, to August 28, 1917. He was promoted to 1st Lieut., 3rd Cavalry, July 1, 1916, and to Captain of Cavalry, July 3, 1917.

Detailed to the Aviation Section, Signal Corps, Colonel Peabody was assigned to the Aviation School at San Diego, Calif., where he was on duty as an instructor in aerodynamics, at the same time undergoing flying training.

Transferred to Ellington Field, Houston, Texas, he was on duty as Assistant to the Officer in Charge of Flying Training from February 15, 1918, to March 20, 1918, when he was assigned to duty as Officer in Charge of Flying at Eberts Field, Lonoke, Ark.

From May 13 to to September 7, 1918, Colonel Peabody was a student at the School for Aeronautical Engineering, Massachusetts Institute of Technology, Cambridge, Mass., following which he was ordered to duty overseas. He was on duty in France with the A.E.F., as technical representative of General Staff Mission from November 1 to 20, 1918, and then returned to the United States and was assigned to March Field, Riverside, Calif., where from December 16, 1918, to June 29, 1922, he performed various duties, such as Officer in Charge of Cadet Department to September 30, 1919; Instructor, Garrison School, January 1 to March 11, 1919; Officer in Charge of Forest Fire Patrol, May 6, 1919, to July 9, 1919; Summary Court Officer; Recruiting Officer; Executive Officer, July 18 to August 15, 1919; Instructor, Educational and Vocational Training, September 15 to November 30, 1919; Officer in Charge of Ground Instruction, October 1, 1919, to August 31, 1920; Commandant of the Flying Cadet Detachment, December 13, 1919, to September 30, 1920; Officer in Charge of Training, June 1, 1920, to June 30, 1921; Commanding Officer of the post, June 26, 1921, to June 29, 1922; and Commanding Officer of the 19th Pursuit Squadron, October 10, 1921, to June 29, 1922.

Transferred to the Hawaiian Department, Colonel Peabody commanded Luke Field and the 5th Composite Group, July 16, 1922, to October 31, 1922, when illness forced him to return to the United States. After a number of months at the Letterman General Hospital, he was assigned, January 25, 1923, as Assistant Air Officer of the 9th Corps Area at San Francisco, Calif., and as Commanding Officer of the 33rd Air Intelligence Section of that Corps Area.

On May 4, 1923, Colonel Peabody was assigned to duty as Professor of Military Science and Tactics, University of California, Berkeley, Calif., and he continued on this duty until the summer of 1928, when he was transferred to Langley Field, Va., for duty as a student at the Air Corps Tactical School. Following his graduation from this school in June, 1929, he continued his status as a student officer at the Command and General Staff School, Fort Leavenworth, Kansas, and upon completing a two-year course thereat, was assigned to Maxwell Field, Ala., for duty as Assistant Commandant of the Air Corps Tactical School. Towards the latter part of his tour at Maxwell Field, he served as a member of the Air Corps Board, until July 24, 1934, when he was assigned to duty as student at the Army War College, Washington, D.C. Upon his graduation from this institution in June, 1935, he was transferred to the Hawaiian Department.

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LIEUT. COLONEL EDWIN B. LYON

Lieut. Colonel Edwin B. Lyon, now stationed at Randolph Field, Texas, and Assistant Commandant of the Air Corps Primary Flying School, was born at Las Cruces, New Mexico, December 8, 1892.

Upon graduating from the U.S. Military Academy, June 12, 1915, he was commissioned a Second Lieutenant and assigned to the 7th Cavalry. From September 14 to December 25, 1915, he served with the 9th Cavalry at Douglas, Arizona, awaiting the arrival of the 7th Cavalry from the Philippines, and thereafter with his regiment on border duty to March, 1916, and with the Punitive Expedition into Mexico to December 21, 1916.

Detailed to the Aviation Section, Signal Corps, Colonel Lyon completed the course of instruction at the Aviation School, July 27, 1917, when he was rated a Junior Military Aviator. He continued on duty at San Diego until June 15, 1918, in the capacity of Supply Officer. During April and May, 1918, he served as President of a Board for the establishment of coast defense sites on the Pacific Coast.

Transferred to Ellington Field, Houston Texas, where he completed a course of instruction in Bombardment aviation, on

September 1, 1918, he then took the course in aerial gunnery at Carlstrom Field, Arcadia, Fla., proceeding on November 4, 1918, to Garden City, L.I., New York, for duty with overseas Handley-Page Bombing Group. Upon the signing of the Armistice, he was transferred to the 1st Provisional Wing and assigned to command Group "D" at Henry J. Damm Field. Upon the abandonment of this latter field, he performed various duties at Mitchel Field, N.Y., the last of which being Officer in Charge of Flying.

Relieved from duty with the Air Service and assigned to the U.S. Military Academy, West Point, N.Y., Colonel Lyon returned to the Air Corps August 26,1921, and was placed on duty as Air Officer of the 1st Corps Area. In October, 1923, he began the one-year course of instruction at the Air Service Tactical School at Langley Field, Va. Upon his graduation he remained at Langley Field as an Instructor at the Tactical School until June, 1926, when he was assigned as student to pursue the one-year course of instruction at the Command and General Staff School, Fort Leavenworth, Kansas.

After a two-year tour of duty in Washington, D.C., in the Schools Section, Training and Operations Division, Office of the Chief of the Air Corps, Colonel Lyon was transferred to the Panama Canal Department for station at France Field, where for a brief period he served as Commanding Officer of the post, the 6th Composite Group and the Panama Air Depot; for about 18 months as Commanding Officer of the 25th Bombardment Squadron,and for the remaining period of his foreign service tour as Executive Officer and Adjutant of France Field and the 6th Composite Group.

Returning to Washington for duty as a student at the Army War College, he graduated therefrom on July 11, 1932; was a member of the War Department General Staff, G-4, Washington, for the next four years and, since August 6, 1936, has been stationed at Randolph Field, Texas.

Colonel Lyon was promoted to 1st Lieut. of Cavalry on July 1, 1916, and to Capt., June 28, 1917; to Major, Air Service, July 1, 1920; and to Lieut. Colonel,June 29, 1936. During the war he held the temporary rank of Major. In October, 1919, he participated in the Transcontinental Reliability Test Flight. He is listed as a Distinguished Graduate of the Command and General Staff School.

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From the Commanding Officer of Air Corps Troops, Fort Sill, Oklahoma, comes word that "The flood area has nothing on us. For the past week this portion of the United States has been inundated with a true Old Style Oklahoma Rain (Dust Storm) which has made flying almost impossible, and for those who did attempt to enter the higher stratum it gave them a good opportunity to demonstrate their ability in 'Blind Flying.'"

The above item was written on February 19th.

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AWARD OF SOLDIER'S MEDAL

Official notification was received by the Commanding Officer of Air Corps Troops, Fort Sill, Okla., that the Soldier's Medal has been awarded to Major Frederick D. Lynch, Air Corps, and Staff Sergeant Joseph F. Murray, 1st Balloon Squadron, Air Corps, for bravery in connection with the crash and destruction by fire of a free balloon near Fort Sill on July 10, 1936. The presentation will be made through the Commanding General of the 8th Corps Area.

It will be recalled that Major Lynch and Sergeant Murray were selected for the Cheney Award for 1936.

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ACTIVITIES OF 18TH RECONNAISSANCE SQDN.

The 18th Reconnaissance Squadron, GHQ Air Force, Mitchel Field, N.Y., has qualified all its flying personnel (including the enlisted photographers attached from the 8th Photo Section) as expert aerial gunners. In order to insure that gunners maintain their proficiency, each one is required to fire at least once each month.

Much interest has been shown by the Squadron in the Skeet Range recently constructed on the south side of the flying field by 1st Lieut. J.M. Jones, the Squadron Service Section Commander. The interest is higher than the scores to date, but it is expected that the gunners by diligent practice will acquire the knack of knocking off all the birds even from station 8.

This Squadron has made considerable progress since its organization, September 1, 1936, in the organization and training of the various sections and crews, and after March 1st will concentrate on Dead Reckoning and Celestial Navigation for those officers of the combat crews who are not graduates of a navigation school. Five officers of the Squadron are graduate navigators.

None of the Squadrons on the field are looking forward to the contemplated increase of personnel after March 1st with greater anticipation than the 18th. The News Letter Correspondent states that "when this increase in personnel is consummated, it is hoped that the shopworn expression 'shortage of personnel' will be encased in concrete and buried to a depth from which it may not be exhumed by the hand of man or machine.'

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The News Letter would appreciate material from March and Maxwell Fields.

THE COLD WEATHER EQUIPMENT TEST

THE Headquarters Squadron, 9th Bombardment Group, Mitchel Field, N.Y., having been ordered to take part in the Cold Weather Equipment Test, took off, heavily laden with winter clothing and flying equipment, for Selfridge Field, Mich., where Colonel Walter H. Frank, commanding the Test Group, together with his Staff, had already set up temporary headquarters.

Ground personnel and baggage were transported to Selfridge Field by the Provisional Transport Squadron, while the combat crews, led by Captain Joseph C.A. Denniston, proceeded there in B-10's. The movement was completed on February 3, 1937, and the Squadron settled down to the business of testing various types of winter equipment. Considering the comparatively mild temperatures encountered, it is rather difficult to determine whether the men were disappointed or grateful for the spring-like weather. Probably the most disappointed individual of them all was Corporal Gowing, operator of the Snow-Go, who divided his time between Detroit and scanning the skies for signs of snow.

Lieut. David P. Laubach, Privates Diamintini and Wiener had the most stirring experience when the landing gear of the airplane in which they were making a training flight refused to function.

Lieut. Laubach, while preparing to land at Wayne County Airport, discovered that the wheels would not come down. He turned back to Selfridge Field and notified the Control Tower of his predicament. Upon receiving advice from Captain Irvine, of the Materiel Division, Lieut. Laubach put the plane into a series of short, abrupt dives. These maneuvers brought the wheels into position, but they refused to lock. He had the choice of "bailing out" with his crew or of attempting a landing and a possible crash. He chose the latter. With the entire line personnel of Selfridge Field looking on, he made his approach for the concrete runway. In order to prevent disaster, it was necessary to make a perfect three-point landing, the landing gear being held by nothing more than the supporting cable. A more beautiful landing has never been made. As the big ship rolled to a stop, spectators held their breath, but the wheels remained intact, sufficient to support the weight of the airplane Lieut. Laubach had cheated the undertaker a fidgety ambulance driver, and saved the Government some sixty thousand dollars. The crew emerged with visible signs of relief, which they tried hard to conceal.

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FLYING CADETS ASSIGNED TO ACTIVE DUTY

The 30 Flying Cadets who graduated from the Air Corps Advanced Flying School on February 17, 1937, the names of whom were published in a previous issue of the Air Corps News Letter, were assigned to extended active duty with Air Corps tactical units at the Air Corps fields set forth below:

To Barksdale Field, La.:
James R. DuBose, Jr.; William E. Eubank, Jr.; Elbert Helton (Attack), and Eugene H. Snavely (Bombardment).

To March Field, Calif.:
Clyde Box and Wallace E. Nau (Attack) and Walter H. Dillingham (Pursuit).

To Langley Field, Va.: Jacob J. Brogger, Joseph F. Hunker and Hubert Zemke (Pursuit); Philip G. Cochran, Edward G. Hillery, Donald W. Macdonald, William K. McNown, Thornton K. Myers, Norris Perry, David A. Tate, Harold E. Watson and Earl B. Young (Bombardment).

To Selfridge Field, Mich.:
Steele R. Patterson and Henry G. Thorne, Jr. (Pursuit); Julian M. Bleyer, Lloyd H. Dalton, Jr., Thomas E. Margrave, James W. Phelps, Jr., Jack L. Schoch, Robert A. Theobald and Sam P. Triffy (Bombardment).

To Brooks Field, Texas:
Sterling G. Harvey and Aaron H. Hoffeditz (Observation).

RETIREMENT OF SERGEANT LITTLETON

Sergeant Winfred E. Littleton, 62nd School Squadron, Air Corps, Kelly Field, Texas, was placed on the retired list, pursuant to Par. 10, Special Orders No. 47, War Department, February 27, 1937.

Sergeant Littleton entered the service on April 2, 1907, and was assigned to Company "K" of the 1st Infantry. He has served in the Infantry, Engineer Corps, Marine Corps and Air Corps since that date. He served as a commissioned officer in the Corps of Engineers from July 25, 1918, to February 3, 1919. He has ten honorable discharges, all of which bear the notation of "Character: Excellent."

The officers and men of Kelly Field congratulate Sergeant Littleton on his excellent record, and their good wishes go with him on his well earned retirement.

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Under special orders of the War Department, recently issued, Lieut. Colonel Harvey S. Burwell, Air Corps, is relieved from duty in the Office of the Chief of the Air Corps, Washington, as Liaison Officer, General Headquarters Air Force, and assigned to duty at March Field, Riverside, Calif.

WAR DEPARTMENT ORDERS

Changes of Station: To Barksdale Field, La.: Major Gilbert T. Collar, 1st Lieuts. Robert B. Landry and Norman D. Sillin, from Panama Canal Department; 1st Lieut. John P. Kenny from the Philippines.

To Chanute Field, Ill.: 2nd Lieut. Opal E. Henderson, from Hawaiian Department.

To Fort Logan, Colo.: 1st Lieut. Byram A. Bunch, from Fitzsimons General Hospital, Denver, Colorado.

To Hamilton Field, Calif.: 1st Lieut. Chester P. Gilger, from Hawaiian Department.

To Hawaiian Department: Major Harold L. Clerk, upon completion of his present course of instruction at the Command and General Staff School, Fort Leavenworth, Kansas; Captain Frank D. Klein, from Materiel Division, Wright Field, Ohio; 1st Lieuts. George R. Acheson, Mitchel Field, N.Y.; Paul D. Burker, Jr., and James A. Ellison, from Barksdale Field, La.; Richard I. Dugan and Charles B. Stone, III, Hamilton Field, Calif.; Elder Patteson, Randolph Field, Texas.

To Langley Field, Va.: 1st Lieut. Irving R. Selby, from Panama.

To March Field, Calif.: 1st Lieuts. Harold Q. Huglin, from the Philippines; Thomas B. Hall, from Panama; Thomas R. Lynch, from Philippines.

To Maxwell Field, Ala.: Captain Orval R. Cook, from U.S. Military Academy, West Point, N.Y., for duty as student in 1937-1938 course at the Air Corps Tactical School.

To Mitchel Field, N.Y.: Lieut. Colonel Donald P. Muse (Major) from Panama; 1st Lieut. Fay R. Upthegrove, from Hawaii.

To Newport, R.I.: Lieut. Colonel William E. Lynd (Major), Office Chief of the Air Corps, for duty as student at the Naval War College.

To Panama Canal Department: Captains Manning E. Tillery, Barksdale Field; Clarence D. Wheeler, Langley Field; 1st Lieut. John J. O'Hara, from Brooks Field, Texas; Lieut. Colonel George E. Lovell, Jr., 1st Lieuts. Robert F. Tate and Felix Vidal, from Barksdale Field; Charles Sommers, from Kelly Field; Captain Guy Kirksey, Hamilton Field; Franklin C. Wolfe, March Field; Major George W. Polk (Captain) upon completion of his present course of instruction at Air Corps Tactical School, Maxwell Field, Ala.

To the Philippines: 1st Lieuts. Wendell W. Bowman, Langley Field; Ralph O. Brownfield, Scott Field; Reuben C. Hood, Jr., Barksdale Field.

To Randolph Field, Texas: 1st Lieut. Robert L. Scott, from Panama; 2nd Lieut. John G. Benner, Selfridge Field; 1st Lieuts. Harry S. Bishop and David N. Crickette, from Hawaii; Major Isaiah Davies, from Philippines.

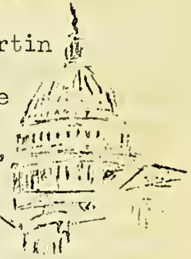
To Scott Field, Ill.: Captain Roscoe C. Wriston, from Hawaiian Department.

To Selfridge Field, Mich.: 1st Lieuts. Paul B. Wurtsmith, from Philippines; Allen W. Reed, from Panama.

To Wright Field, Ohio: Captains Charles A. Ross, from Panama; Oscar F. Carlson, Chanute Field, for duty as student in 1937-1938 course at Air Corps Engineering School.

To Hawaiian Department: 1st Lieut. William Ball, from Hamilton Field.

NOTES FROM THE WASHINGTON OFFICE



Brigadier General Frederick L. Martin returned to Wright Field, February 27th, following a conference in the Chief's Office.

Lieut. Colonel William F. Volandt, Majors Bennett E. Meyers and Franklin O. Carroll, returned to their station, Wright Field, on February 24th, following a conference in the Chief's Office.

Recent visitors were Captain Roland Birnn, from Maxwell Field, Ala., and Colonel Lawrence S. Churchill, commanding the Middletown Air Depot, for conference; Captain Bernard A. Bridget, from Randolph Field, Texas; Major Richard L. Creed, from Maxwell Field, Ala.; 1st Lieut. Ralph P. Swofford, from Wright Field; Major Walter E. Richards, from Kelly Field; 1st Lieut. John C. Horton, from Randolph Field; and 2nd Lieut. John W. Furlow from Langley Field.

Colonel Chalmers G. Hall, Chief of the Supply Division, returned February 27th from a procurement Inspection trip.

Captain Stewart W. Towle, Jr., returned to his desk in the Personnel Division, March 9th, following a leave of absence.

Major Lowell H. Smith, Chief of the Inspection Division, returned March 1st from a navigation flight to Florida.

Major Karl S. Axtater, of the Supply Division, returned March 1st from New York City.

Colonel Herbert A. Dargue, from Maxwell Field, arrived March 2nd for temporary duty in the Chief's office.

Major Morton H. McKinnon, of the Personnel Division, made a navigation flight to Selfridge Field, Mich., on March 11th.

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ADDITIONAL PERSONNEL NOTES

Major Oliver S. Ferson was promoted from temporary to permanent rank of Major from February 16, 1937.

Major William L. Boyd (Captain), stationed at Fort Bliss, Texas, is under orders to report for duty as student in the 1937-1938 course at the Air Corps Tactical School, Maxwell Field, Ala.

Orders assigning 1st Lieut. Robert F. Travis, Langley Field, Va., to Panama, have been revoked.

Effective August 17, 1937, Lieut. Colonel John B. Brooks, Air Corps, is relieved as a member of the War Department General Staff and from duty in the Office Chief of Staff, Washington, D.C., and assigned to duty as Commandant of the Air Corps Primary Flying School, Randolph Field, Texas.

The active duty tour of 2nd Lieut. Frank Beard Scott, Air Reserve, now stationed at Barksdale Field, La., has been extended to June 15, 1939.

Second Lieut. William T. Lovelace, Air Reserve, of Jackson, Miss., has been assigned to active duty at Langley Field, Va., to March 31, 1940.

NEW CLASS OF STUDENTS AT ADVANCED FLYING SCHOOL

The new class of students for the Air Corps Advanced Flying School, having completed the course of instruction at the Air Corps Primary Flying School, Randolph Field, Texas, reported for duty at Kelly Field, Texas, on February 25th, and started flying training on March 1st. They have been assigned for training in the specialized branches of aviation, as follows:

OFFICERS

Observation Section

Lt. Col. Laurence F. Stone, A.C.	Pocatello, Idaho
Lt.Col. Raymond E. O'Neill, A.C.,	San Francisco, Cal.
Major Warner B. Gates, A.C.,	Evanston, Ill.
Major Walter J. Reed, A.C.,	Scarsdale, N.Y.
Major Geo. G. Lundberg, A.C.,	Olean, N.Y.
Captain Howard H. Couch, A.C.,	Monrovia, Calif.
Captain James F.J. Early, A.C.	Worcester, Mass.
Captain John K. Kirkendall, A.C.	Dallas, Pa.
1st Lieut. Charles E. Wheatley, Jr., Cavalry,	Portland, Me.
2nd Lieut. Charles B. Winkle, Inf.	Seaside, Ore.

Attack Section

Lieut. Lorenzo Egurrola, Mexican Navy.

FLYING CADETS

Attack Section

Horace D. Aynesworth	Alpine, Texas
Follett Bradley, Jr.	Langley Field, Va.
Murray A. Bywater	Salt Lake City, Utah
Edwin S. Chickering	Temple, Texas
Charles A. Clancy	San Diego, Calif.
Raymond L. Cobb	Brownwood, Texas
Murray W. Crowder, Jr.	Joshua, Texas
Allman T. Culbertson	Dansville, N.Y.
Raymond L. Curtice	Concord, N.H.
Waymond A. Davis	Lubbock, Texas
Julien W. Freeman	Clinton, S.C.
Charles C. Kegelman	El Reno, Okla.
Arthur W. Kellond	San Antonio, Texas
Richard F. Lorenz	Chicago, Ill.
John H. Payne	Austin, Texas
George L. Robinson	Corona, Calif.
William R. Stark	Starkville, Miss.
Theodore A. Suiter	Spearfish, S.D.
Frank K. Thompson	Columbus, Ohio
Henry Viccellio	Chatham, Va.
Delmer E. Wilson	Ephrata, Wash.

Observation Section

James B. Baker	Bird Island, Minn.
Thomas D. Brown	Spokane, Wash.
George R. Carr	Pocatello, Idaho
Lewis Countway	Quincy, Mass.
Guy L. Hudson	Los Angeles, Calif.
John R. Marshall	Montgomery, Ala.
Harold M. Means	Kane, Pa.
Frederick L. Moore	Fillmore, Calif.
Harold Y. Sewart	Murfreesboro, Tenn.
McClellan F. Stunkard, Jr.	Governors Is'd, N.Y.
Morris E. Thomas	St. Petersburg, Fla.
Adolph E. Tikofski	Walpole, Mass.

Pursuit Section

John R. Alison	
Ancil D. Baker	Moscow, Idaho
William E. Basye	Independence, Mo.
Francis J. Black, Jr.	Tallahassee, Fla.
George A. Blakey	San Antonio, Texas
Thomas L. Butner	Roanoke, Va.
Leland G. Fiegel	Rochester, Minn.
Ronald F. Fallows	Mason City, Iowa
Henry C. Godman	Palo Alto, Calif.
Milton L. Hardeman	Athens, Ga.
Victor M. Heath	Fon Du Lac, Wis.
Charles R. Greening	Tacoma, Wash.
Donald H. Kauffman	Carlisle, Pa.
Guilford R. Montgomery	Sidney, Neb.
Joseph A. Morris	Alva, Wyo.
Homer M. MacKay	Lansing, Mich.
Harold J. Rau	Shavertown, Pa.
James O. Reed	Eugene, Ore.
Barton M. Russell	San Diego, Calif.
Wilbur B. Sprague, Jr.	Manhasset, N. Y.
Ansley Watson	New York, N. Y.
Jesus A. Villamor (Philippine Constabulary)	

It will be noted from the above that, beginning with this class, students are no longer being specialized in 'Bombardment," as a new policy calls for the assignment of graduates from the Advanced Flying School to single-engined tactical organizations for two years. For this class, all students will receive approximately 25 hours' training on bi-engined equipment (Keystones), which is a lot more than students in these sections have received in the past.

Seventeen BT-8's have been ordered transferred from Randolph Field to Kelly Field and were allotted to the three sections to be used to supplement the other equipment now available, so that all students will receive training in them.

When this class started training at the Primary Flying School in July, 1936, it numbered 140 Flying Cadets, 10 Air Corps officers, 5 officers from other branches of the U.S. Army, one foreign officer and one Flying Cadet from the Philippine Constabulary; total, 157 students. Since 66 of these students were transferred to the Advanced Flying School, it will be noted that 42 percent of the original class of students successfully completed the primary flying course at Randolph Field.

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THE AIR CORPS TECHNICAL SCHOOL

In a discussion recently on the Air Corps Technical School, Chanute Field, Rantoul, Ill., during a Reserve officers' conference held at the armory of the University of Illinois, Major James B. Carroll, of Chanute Field, stated that the enrollment at this school is now larger than at any time in the history of the field, even including the war period. There are 547 students in the school, including 39 officers and 508 enlisted men. The total strength of the field is 1,150 officers and enlisted men.

Major Carroll stated that the construction and maintenance of military aircraft and equipment is one of the most exacting sciences of the world. When airplanes go up, both the tactical success of the flight mission and the life of the pilot depends upon the proper functioning of the airplane and equipment. Work cannot be done by the trial and error method.

AIR CORPS
NEWS LETTER

ISSUED BY
THE OFFICE OF THE CHIEF OF THE AIR CORPS
WAR DEPARTMENT
WASHINGTON

VOL. XX APRIL 1, 1937 NO. 7

VOL. XX AIR CORPS NEWS LETTER NO. 7.
Information Division
Air Corps
April 1, 1937
Munitions Building
Washington, D.C.

The chief purpose of this publication is to distribute information on aeronautics to the flying personnel in the Regular Army, Reserve Corps, National Guard, and others connected with aviation.

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INSTRUCTION IN COMMUNICATIONS AT AIR CORPS TECHNICAL SCHOOL

By Lieut. Forrest G. Allen, Air Corps

THE widespread realization that dependable radio communication is an essential adjunct to successful aerial operations has resulted in a very great demand for a large number of trained communications personnel. The course of instruction for aircraft radio operator-repairers conducted by the Department of Communications has been designed to furnish the service with trained men having reasonably high technical qualifications who, with little additional practical experience, will be prepared to perform any communications assignment.

The communications course for enlisted specialists is thirty-two weeks long, the first eight weeks of which are spent in the Department of Basic Instruction. Upon entering the Department of Communications, each student follows the prescribed schedule of instruction involving eight sub-courses, the facilities of which are briefly described below.

One of the first classes the embryo "communicator" attends is Typewriting. Typewriters having Western Union keyboards are used and the minimum requirement is twenty words per minute, using the touch system. Those students who are already proficient in the use of the typewriter when they enter school are excused from typing and attend the code classes instead.

After the student has qualified in typing, he attends code instruction twice daily for the duration of his course. The Code Room is equipped with automatic code machines of modern design, low and high frequency radio receivers, an Ediphone recorder for checking student transmitting ability, and an "ink recorder" for making permanent records on paper tape of each student's accuracy in forming code characters with the standard hand telegraph key and the Vibroplex semi-automatic key.

When the average student has obtained a code speed of approximately twelve words per minute, he is ready for the subcourse, called Applied Communications. This subject includes all phases of operating technique, aside from the actual use of radio equipment, which the aircraft radio operator must know. Each student is required to develop an operating knowledge of the Joint Army and Navy Radiotelegraph and Radiotelephone Procedure and the procedure in communicating with Department of Commerce radio facilities. After learning the principles of "message handling," the student applies them in practical exercises throughout the remainder of the course.

A brief but comprehensive course in electrical and radio fundamentals is given in the subcourse, entitled Principles of Radio Communication. While theoretical in nature, this subject has been made highly practical through the careful selection of demonstration and individual laboratory experiments. For example, students undergoing instruction on radio transmitters perform experiments which demonstrate the principles involved in the Command and Liaison Set transmitters. Particular attention is devoted to the proper tuning and adjustment of the circuits and correct interpretation of meter indications since experience has shown that these "theoretical" factors are of considerable importance in the practical use of the actual radio sets installed in aircraft. Cathode ray oscilloscopes are frequently used to make visible demonstrations of electric wave phenomena which formerly required the student to exercise considerable imagination. The equipment for individual laboratory experiments is permanently mounted on breadboards; with his experiment each student is given a supply of wires terminated in special quick-fastening connectors resembling glove snaps, so that the more complicated hook-ups may be accomplished within a few minutes. Specially prepared experimental data sheets are provided with each experiment so that students may quickly record laboratory data and have sufficient time to write out the answers to questions devised to aid them in drawing logical conclusions. From the foregoing description it will be readily appreciated that the Department of Communications has far better lecture room and laboratory facilities than most colleges and universities.

An understanding of the electrical and radio fundamentals provides the student with a proper foundation upon which to build his practical knowledge of standard Air Corps radio equipment; this special knowledge is acquired in the subcourse called Circuit Test and Repair of Radio Equipment. In this subject the student receives practical instruction on the operating adjustments, circuit testing and applied principles of modern service radio equipment. The Circuit Test and Repair laboratory contains over fifty specially designed, steel laboratory tables on which are mounted recent types of Command Sets, Liaison Sets, Radio Compasses, and Test Equipment; all power for the operation of aircraft radio equipment is obtained from a central power plant adjoining the laboratory room. Conspicuous by way of contrast is a row of ten aircraft radio transmitters, in vogue over ten years ago, which are employed in teaching the principles of transmitter trouble shooting. This is done by requiring the student to place designated troubles in the transmitters after which he records and analyzes the symptoms obtained. Although obsolete equipment is used in this phase of instruction, the principles involved are essentially the same as those embodied in modern equipment. Working with modern equipment, the student is required to develop an intimate practical knowledge of the numerous adjustments essential in its intelligent operation and maintenance. The general objective in this subcourse is to develop in the student the ability to read and understand the manufacturers' Handbooks of Instruction and Technical Orders pertaining to standard radio equipment, and intelligently to apply in practice the directions contained therein. It is doubtful if a more complete and well designed laboratory for this kind of important instruction could be found anywhere.

The ability to handle skillfully a soldering iron is as important to aircraft radio men as the ability to handle radio messages. In the subcourse entitled Shop Maintenance of Radio Equipment, students receive expert instruction in the care and use of soldering irons and the few hand tools associated with the radio repairman's work. Practical jobs assigned in this phase of instruction include radio cord and plug assembly, the formation of joints and splices; bus bar, cabled and flexible wiring; and several exercises designed to develop a small amount of skill in the above operations.

Field telephony and telegraphy are employed by the Air Corps to a limited extent, generally during maneuver pediods when working in cooperation with other arms. Consequently, the course in Wire Communication Equipment is a short one. During the time allotted, the student receives instruction in the installation, operation and field maintenance of field telephones, switchboards, and telegraph equipment, including the use of the latter in simplex and phantom circuits permitting the simultaneous transmission of telegraph and telephone messages over the same wires without mutual interference. Following instruction and practice in the installation of simple field wire systems, the student receives a small amount of training in field trouble shooting methods. The principles of wire telephony are also embodied in aircraft interphone equipment, a thorough knowledge of which is essential to aircraft radiomen.

The final phase of the course is devoted to thorough instruction, highly practical in nature, on the Inspection and Maintenance of Aircraft Radio Installations. Here the student is taught how to install and service aircraft antenna installations, how to "bench test" radio equipment prior to placing it into service on aircraft, how to perform the prescribed inspections of aircraft radio installations, and how to use a systematic method of locating troubles in the installation. Special lectures are given explaining the Air Corps Technical Order system, the Air Corps Circular system and the Signal Corps Supply Letter system; the student is required to look up references in these files throughout his work in this phase of instruction. The student is also taught how to read an airplane electrical wiring diagram, since some of the wires of the airplane communication system are included in the same conduits as other portions of the airplane electrical system. When aircraft are available, students are given actual operating practice in flight. In every respect, this subcourse is the most practical and most valuable in the entire communications course. It may be likened to the keystone of an arch, and being so it requires the firm foundation supplied by the various other courses which are prerequisite to it.

The course for Communication Officers is essentially the same as that given to enlisted specialists with the exception, however, that much greater emphasis is given to instruction in the electrical and radio fundamentals. In addition to the subjects already described, the officers are given instruction in the Duties of Communication Officers. This subcourse includes training in Signal Supply procedure, Message Centers and Military Cryptography, and Signal Orders. The Communication Officers' course is nine months long.

Following the trend of modern educational practices, the Department of Communications has adopted as standard for all examinations the so called "New Type" examination questions. Examinations of this type often include over a hundred questions, yet their design is such that they can be completed by the average student in from twenty-five to thirty minutes. The examinations may be graded in a few minutes through the use of specially designed answer keys, the use of which insures a standard basis for the grading of all examinations since there can be no doubt as to the "degree of correctness" of any questions; instructor opinion is thus eliminated in the grading of examinations

DEDICATION OF NEW HANGARS AT LAWSON FIELD, GA.

By the News Letter Correspondent

SUNDAY afternoon, March 14, 1937, marked the completion of a new phase in the building and expansion program of Lawson Field, Fort Benning, Ga. Before a crowd of 3,000, which included the Atlanta Wing of the Junior Birdmen of America and hundreds of civilian visitors from Columbus, Ga., as well as Fort Benning personnel, the new hangars at the south end of Lawson Field were formally opened and dedicated by Colonel Bruce Magruder, Executive Officer of Fort Benning, Ga., who, by pressing a button, opened the 15-ton electrically operated hangar doors to the accompaniment of music by the 29th Infantry Band of Fort Benning.

Immediately following the opening of the doors, there was a demonstration of speed and maneuverability of light and medium tanks from the 66th and 67th Infantry, Fort Benning. Led by Captain Edwin J. Van Horne, 67th Infantry, six tanks came charging around the north, west and south sides of Lawson Field, with wide open throttle and machine guns firing blank ammunition. After the tanks were parked in a line just off the ramp in front of the new hangars, Capt. Van Horne explained to the crowd the type, weight, speed, armament, use and special features of each tank in a brief but comprehensive address over the mobile public address system, which was loaned to Lawson Field by the Academic Department of the Infantry School, Fort Benning.

Immediately following Captain Van Horne's address, Lieut. Thomas D. Ferguson, Air Corps, took off in an O-46A with Lieut. Thomas Lee Gates, Air Reserve, as observer, and flew a series of Observation Aviation missions, with Lt. Thomas M. Bartley, Jr., Air Reserve, furnishing explanatory remarks and announcements over the loud speaker. The missions flown included:

1. An exhibition of two-way communication between air and ground by means of panels, pyrotechnic signals and wing signals;
2. Drop-message and pick-up message demonstration;
3. A demonstration of communication between air and ground by means of two-way radio; and
4. Sensing of simulated artillery fire, with the use of puff targets.

Ground transmitter and receiver, furnished through the courtesy of the Tank School, Fort Benning, were connected with the loud speaker, in order that the crowd might hear the transmissions from ground to airplane and from airplane to ground.

Upon completion of these four types of Observation missions, Captain John W. Warren, Air Corps, took off in an O-25A, drop-tested a parachute, and towed a sleeve target across Lawson Field, releasing it in front of the hangars. Meanwhile, a demonstration of instrument flying under the hood was being given by Lieut. Gates in a BT-2B1, with Lieut. Ferguson as safety pilot. As a novelty feature for the entertainment of the crowd, this flight was controlled from the ground by radio, and Lieut. Gates executed climbing turns, steep banks, stalls and recoveries, etc., upon the request of Lieut. Bartley at the microphone, with the crowd hearing each request over the loud speaker.

On exhibition, but not taking part in the aerial demonstration, were an A-17, a B-10, and a P-12E from Maxwell Field, Ala., and an O-46A from Lawson Field. Thus, one airplane of each tactical type of the Air Corps was available for inspection by the crowd. Also on exhibition, inside the hangars, were exhibits by:

1. The Photo Section, Lawson Field, which included cameras, a camera gun, vertical and oblique photographs of Fort Benning and vicinity, and a mosaic map of the Fort Benning Military Reservation;
2. The Armament Section, Lawson Field, which included a Browning M-1, .30 caliber flexible gun mounted on gun trammel which was temporarily removed from the rear cockpit of an O-46A; pyrotechnic tools and M-9, M-10 and M-11 signal flares; one M-8 parachute flare; a belt of .30 caliber ammunition and loading device, and a tow target cable and release mechanism;
3. The Communications Section, Lawson Field, which included message bags, drop and pick-up message equipment, the latest type air-ground liaison radio equipment (SCR-185 set), a command set (SCR 183), and radio test equipment (I-65A);
4. The Parachute Section, Lawson Field, which included a parachute suspended from the ceiling of the hangar and strapped to a drop-test dummy dressed in winter flying clothing;
5. The First Battalion, 83rd Field Artillery, Fort Benning, which included a 75 mm. gun, model 1897, M-2; and
6. The Fourth Battalion, 29th Infantry, Fort Benning, which included a Browning .30 caliber ground machine gun, model 1917, and a Browning M-2, .50 caliber ground machine gun.

The success of this demonstration was due in a very large degree to the excellent cooperation received from all sources. It was most fitting that the exhibition should include, in addition to Air Corps equipment, that pertaining to other branches of the military establishment, since Lawson Field is not attached to, but rather a part of the Infantry School.

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the grade awarded a given paper will be the same regardless of who grades it. By making the examinations comprehensive in scope, each instructor can obtain a reasonably accurate measure of the knowledge possessed by his students, since errors due to chance selection of questions are virtually eliminated. When a sufficient number of students have taken each examination, the Training Literature Section conducts elaborate statistical investigations for the purpose of eliminating poorly designed questions and determining the degree of difficulty of the remaining questions. By this process, subsequent revisions of examinations are subject to continuous improvement as the amount of statistical data accumulates. In practice, the use of the "New Type" comprehensive examinations has met with universal favor by both instructors and students, since considerable time is saved by all concerned.

Many of the graduates of the communications course will report to their organizations to become aircraft radio operators aboard modern bombardment airplanes. Their responsibilities are akin to those of radio operators aboard seagoing vessels and they will become more so as military aviation develops and progresses. It does not require much imagination to conceive of situations where the radio operator will be directly responsible for the safety of the airplane in which he is flying and its crew. In such situations the level headed, resourceful operator of high technical qualifications will perform a service of much greater value than the cost of his training at the Air Corps Technical School.

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GENERAL PRATT DEPARTS FOR NEW STATION

Brigadier General Henry C. Pratt, U.S. Army, relinquished command of the Second Wing, GHQ Air Force to Colonel Henry B. Clagett on March 12th, and departed from Langley Field for his new command - the Air Corps Tactical School at Maxwell Field, Ala. The entire Base, which was formed in the vicinity of the main gate, felt very proud, indeed, to have had the pleasure of serving under their beloved commander.

Colonel Clagett will remain in command of the Second Wing until the arrival of the new Second Wing Commander, Brigadier General Gerald C. Brant.

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With the close of February, records show that the 4th Observation Squadron, Luke Field, T.H., completed the most extensive training program in many months. Squadron airplanes flew nearly 200 hours, and with several more months of this same type of training their War Department Training Directive should be completed on schedule.

GEARBOXES

By the Materiel Division Correspondent

From the days of the "Jenny" to our present line of airplanes, the mechanic, in so far as his work keeps the airplane on the ground, has more or less played the part of the forgotten man. It was hard to get performance and still keep maintenance in mind. On the other hand, if the man-hours spent in maintenance keep the high performance airplanes on the ground, then what good is performance?

In the hope that we can strike a happy medium, recent airplanes are coming in with remote-driven gearboxes. Substantially, this is no more or less than moving the rear of the engine back and driving the many gears from a single shaft from the engine proper. This gearbox has several drives to which may be attached vacuum pumps, generators, and other miscellaneous impedimenta necessary to keep our modern airplanes in the air.

To date, development of the gearbox is under way, and it appears to have several advantages, the first among them being the ease with which the engine may be changed by disconnecting the single driveshaft. Second, of course, is the added number of gadgets we may hook onto the drives of the gearbox. We all realize we had just about reached the limit of the accessories we could hang onto the engine proper. Third is the accessibility of these accessories. We hope it will no longer be necessary for the mechanic to hang by his heels, bend a couple of anti-brachiums around a generator, and with cold and numb fingers try to put that slippery nut and lock washer on that bolt that he can't see.

Gearboxes won't be perfect at first, but have patience and we will try to eliminate the "bugs."

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NAVIGATION TRAINING BY 88TH SQUADRON

The 88th Reconnaissance Squadron, Hamilton Field, Calif., is finishing a navigation school course which has been the center of attraction for the past four weeks. The course included about seventy-five hours of ground work, which has been completed, and about thirty hours of actual navigation training missions conducted by the school, which is about one-third completed. The successful completion of this course will qualify all present members of the 88th Reconnaissance Squadron as Dead Reckoning Navigators.

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During the past few weeks, the training activities of the 11th Bombardment Squadron, Hamilton Field, Calif., consisted of instrument flying, dead reckoning navigation and participation in 7th Bombardment Group Combat exercise on Feb. 27th.

Thanks are due to the Commandant of the Infantry School for his sponsorship of the entire program, also to the Tank School; the 66th and 67th Infantry; the 1st Battalion, 83rd Field Artillery; the 4th Battalion, 29th Infantry; the 29th Infantry Band and to the Academic Department of the Infantry School for their participation. Further, thanks are due to the Commanding Officer of Maxwell Field, Ala., as well as to Lieuts. Hale, Hughes and Ackerman, of Maxwell Field, who flew the B-10, the A-17 and the P-12, their cooperation enabling the exhibition to include one airplane of each tactical type of the Air Corps.

To the members of Flight B, 16th Observation Squadron, Lawson Field, the dedication of the new hangars was especially gratifying as a symbol of partial completion of needed improvements begun under the direction of the former commanding officer, Captain (now Major) Lloyd Barnett, and carried on since his transfer to Nichols Field, P.I.

Further needed improvements listed for accomplishment in the near future are:

1. The leveling and grading of the south end of Lawson Field and construction of runways, through cooperation of the Quartermaster, Fort Benning, with W.P.A. labor, thus more than doubling the size of the landing area;
2. Completion of the night lighting system, which at present includes boundary lights, three banks of flood lights, and a rotating beacon, but lacks a sufficient number of obstruction lights;
3. Construction of an aerial gunnery range and a skeet range for required gunnery training; and
4. The acquisition by the Communications Section, Lawson Field, of a suitable ground set (SCR 183) to replace present obsolete and inadequate ground set (SCR 136). Each of the above projects having received tentative approval, their early accomplishment is anticipated.

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31ST SQUADRON GOES IN FOR NAVIGATION

In the 31st Bombardment Squadron these days, the motto and password is "Every Pilot a Navigator." For the last three months the officers and cadets of the Squadron have ground away at navigation problems by the dozen, listening to lectures on everything pertaining to Dead Reckoning Navigation, Maps, etc. "Even in our dreams," says the Hamilton Field Correspondent, "we see a 'Rhumb Line' 'Following the Pilot' over a 'mountain of Logarithms.' Lieut. 'Lonnie' Campbell, as instructor for Navigation in the 31st, has done a great job with his classes, and at last we have reached the point where we can see our motto 'Every Pilot a Navigator,' about to become a reality. A salute to 'Lonnie.'"

THE O-46 PLANE UNDER ICING CONDITIONS

A National Guard pilot reports an experience he encountered recently in connection with icing conditions while piloting an O-46A airplane.

He stated that under such conditions the wind shield becomes immediately opaque and non-transparent and that the ailerons become extremely sensitive, exerting undue pressure on the stick and resulting in very critical action and extreme lateral instability.

The pilot further goes on to state that upon landing at Trenton, N.J., with ice and while on the ground during further snowing conditions with temperature right at freezing, a combination of partial thawing of ice caused icycles to form on the leading edge of the ailerons and in the slot. With from one-eighth to one-quarter inch of ice on the top of the wing, take-off was attempted. Approximately 2,000 feet were necessary to get off the ground with 2,500 RPM. and 34 inches of mercury in power. Immediately the left wing depressed in a rolling action around the longitudinal axis that was impossible to correct because of ineffectual aileron action and excessive stick pressure. The motor was immediately cut and sufficient field was left for a landing - the left wing low but not quite low enough to strike the ground. No damage resulted.

The pilot expressed the belief that the wing section itself is a design that becomes critical to icing conditions and therefore should be avoided; that he is positive that ice and snow on the ailerons, particularly the top side and in the slot ahead of the leading edge of the aileron, regardless of freedom of movement, precludes adequate lateral control, and therefore it seems imperative that pilots be advised that when such conditions of ice or snow are found on the airplane that the wing section, and particularly the entire aileron and its slot be thoroughly cleaned.

Regardless of the type of aircraft flown, icing conditions on the wings, even if present to a very limited extent, are very apt to affect the aerodynamic characteristics of same. The icing conditions described above are not peculiar to any one type of airplane.

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Two Air Corps officers who held temporary advanced rank were permanently promoted to such rank, as of March 31, 1937, viz: Colonel Alfred H. Hobley and Major Robert G. Breene.

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Captain John M. Weikert, Air Corps, is under orders to proceed to the U.S. Military Academy, West Point, N.Y., for duty, upon the completion of his present course of instruction at the C. & G.S. School.

NEW PHYSIOLOGICAL RESEARCH LABORATORY AT WRIGHT FIELD

By the Materiel Division Correspondent

ANNOUNCEMENT was recently made by Brigadier General A.W. Robins, Chief of the Materiel Division, Wright Field, Dayton, Ohio, that the Physiological Research Laboratory which for more than a year has been in the planning and construction stages at Wright Field, has been completed and equipped, and bears altogether the shipshape, antiseptic, and promising appearance of all medical laboratories devoted to scientific research. However, inasmuch as this particular laboratory is to deal with problems affecting the aviator in the various phases of flight, it is somewhat unique and, while a large amount of its medical equipment is standard, it also contains items found in few other laboratories in the world.

In the earliest days of flying such a laboratory was not necessary. Man flew neither sufficiently high, fast, nor far to take him beyond the elements of normal physical reactions. During the World War, however, the question of altitude flying became a vital consideration, and with the realization that very little was known about the artificial induction of oxygen into the human system, a medical research laboratory was established on Long Island which, although it aimed to go into all physical reactions resulting to aviators from flying, gave its attention principally to the study of oxygen problems.

In 1920, the work of the laboratory was discontinued, all activity being absorbed by the development needs of aircraft itself. By 1931, speeds, altitudes, and flying conditions had been stepped up to the extent where attention had to be turned once more to the aviator who in good weather and bad, in heat and in cold, in extremely high altitudes, spins, and at speeds beyond anything previously conceived by the mind of man, was to be responsible for this complicated equipment.

The present laboratory is the result of this need. Upon the joint decision of the Chief of the Air Corps and the Surgeon General, it was located at the Materiel Division in order that advantage might be taken of the expert judgment available in all aeronautical engineering lines, and of the well-equipped engineering shops, where special experimental equipment can be constructed. Situated in the main laboratory building on the ground floor - in order to provide a firm foundation for the massive high altitude chamber - the laboratory occupies a floor space 120 feet long by 30 feet wide. This space is partitioned off into office, physiological laboratory, biochemical laboratory, high altitude laboratory, operating room, balance room, and stock room. The whole laboratory is air-conditioned for the purpose of obtaining the uniform temperatures essential in certain analyses and for results with certain test instruments. The office scarcely requires comment, except that part of its equipment is a library of reference works on general and aviation medicine.

The physiological laboratory is equipped for research on human subjects and contains for the most part standard medical equipment, including metabolism apparatus, blood gas analyzers, which measure the amount of gases, such as oxygen, carbon dioxide, and in some instances carbon monoxide in the blood under varying conditions of altitude; an air analysis apparatus, which analyzes air in the lungs or in sealed compartments, taken during different conditions of flight; and a spirometer, a storage chamber for gas to be used in rebreather tests or for storing samples of exhaled or other air.

The biochemical laboratory - biochemical signifies chemistry of living organisms - contains a chemical table with acidproof top and a sink and drain board of chemical stoneware. The table is serviced with direct and alternating current power, compressed air, vacuum gas and water. There is also a fume hood, a water still centrifuge and refrigerator.

The balance room contains the analytical balances necessary to any chemical laboratory for weighing purposes. Plans are eventually to dust-proof this room.

The operating room also contains standare equipment. A kymograph is installed for the purpose of recording pulse waves, respiratory movements, etc.

The high altitude laboratory contains three pressure chambers, two small, having a capacity of 3 cubic feet, and a very large one. The latter has been recently completed and represents the results of several years of experience in the operation of the first pressure chamber, installed several years ago in the Equipment Laboratory of the Materiel Division.

The new chamber is a great cylindrical steel tube, 31 feet long and 8 feet inside diameter. The interior is divided into three sections, a central compartment 6 feet long, bisecting two identical end compartments, each 12 feet long. Entrance to the end compartments from the center is by two gastight heavy metal doors, equipped with ball bearing hinges, rubber gaskets, and catches, manually operable from within and without. The end compartments are in effect two separate pressure chambers in which separate tests may be performed simultaneously under the same or entirely different pressure conditions. Or if desired, the large doors into the center compartment may be left open, the whole structure forming one 31-foot pressure chamber, which may be positively sealed for any desired temperature or pressure condition by a single entrance door, similar to those dividing the end compartments, leading from outside the pressure chamber into the center compartment.

The chief purpose of the central compartment, however, is to serve as a lock through which entrance can be made from the outside to the end sections during tests without disturbing the pressure conditions in them. The center compartment is entered and the outside door closed. Pressure and temperature conditions are then produced in the center chamber identical to those of the end chamber into which entrance is desired. When these results have been obtained the door into the end chamber may be opened easily and the two chambers in effect become one. Exit can be obtained by closing the door between the end and center compartments, bringing the center chamber back to normal pressure and opening the outer door. It is an interesting experience to see the actual fastness of a door held shut by normal air pressure against an evacuated pressure. Air evacuation to the equivalent of 80,000 feet above sea level and refrigeration to -65° F. can be accomplished in this pressure chamber.

In one of the end compartments at present is a smaller tubular chamber, large enough for a man to crawl into, in which the conditions of the supercharged pressure cabin airplane will be simulated while the surrounding air of the compartment will be that encountered at high altitudes. In all such experimental work, flying personnel will willingly act as the human guinea pigs.

Six observation windows 28 inches in diameter, three for each end compartment, are constructed of safety glass one inch thick, and made fog or frost proof by using two thicknesses, with an air or vacuum space in between. Telephones installed in each compartment make it possible for persons sealed inside during tests to communicate with observers outside the pressure chamber.

The value of the research which may be accomplished with such equipment and competent personnel is almost inconceivable. Practically all the physical reactions of the aviator to altitude flying may be carefully studied while he remains safely on the ground. The effect of extreme cold upon efficiency; the effectiveness of present flying clothing against this cold, the testing of oxygen equipment, the physical and mental reaction of flyers to oxygen over varying periods of time, the effect of carbon monoxide at high altitudes and low temperatures, investigations of use of oxygen mixed with carbon dioxide at high altitudes, and supercharged cabins under high altitude flying conditions are a few of the many problems unsolved. The answer to such problems as these may also be the answer to certain unexplained crashes where pilot and equipment were apparently in first-class condition.

Although not located in the main laboratory building, a centrifugal force laboratory is used in connection with this work. This contains a large centrifuge by means of which it is possible to simulate the forces produced on the body by various aircraft maneuvers, particularly high speed turns, loops, and spins-such maneuvers, in fact, as have been associated with the "blacking out" experience described by various pilots, a condition recognized but never fully analyzed. With the centrifuge, centrifugal forces twenty times the normal acceleration of gravity can be produced. It is estimated that approximately eight times the pull of gravity is sufficient to cause the "blacking out" effect, or momentary unconsciousness. The structure is of duralumin tubing 20 feet long and is mounted to rotate about a horizontal axis. It is operated by an electric motor through a variable speed drive. One end is arranged to accommodate the subject, while the other contains a compartment for counterweights. A recording accelerometer indicates the amount of force produced, while a special instrument makes a graphic record of changes in blood pressure during rotation.

The future of aviation was never more promising. At our threshold higher speeds, longer ranges, greater mechanical efficiency, substratosphere air lanes are virtually ready for us. All these are not of the slightest value, however, unless man is ready to take advantage of them. It is only by scientific and detached study of the physiological and psychological reactions of aviators to the various modern flight conditions that safety can be obtained, even making allowances for a high degree of mechanical efficiency. History has sharpened the point that mechanical efficiency counts only insofar as mankind in applying human efficiency can adapt it to the routine uses of living.

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According to the Riverside, Calif., DAILY PRESS, the Board of Directors of the Riverside Chamber of Commerce has launched a campaign to enlarge March Field and purchase a gunnery range at Muroc Dry Lake. This action followed a report of the aviation committee which has been studying the needs of March Field. Results of the survey made by the committee showed that the Muroc gunnery range would be of benefit not only to aviation but other branches of the service as well. It would provide anti-aircraft and mobile units of the Coast Artillery with a practice ground.

MIRROR PROVES HANDY ARTICLE IN EMERGENCY

A Navy Department press release tells of the ingenuity of a Marine Corps reserve sergeant from the Kansas City base which proved to be of the greatest assistance to one of Pensacola's flight instructors recently.

Captain Peters, U.S. Marine Corps Reserve, departed from Pensacola for Kansas City in an FF-2 plane with Sergeant Caldwell as passenger, Memphis being the first scheduled stop. Word was received at Pensacola that the plane had been forced down in a cotton field just north of Coffeyville, Ala., with a broken oil line, no other damage resulting. No oil lines to fit the description being available, a plane was dispatched to the scene to pick up the oil line and return same to the Pensacola Naval Air Station for repair. The pilot's description of the location of the grounded plane was definite within about a three mile limit. Upon arrival near the scene, the Pensacola pilot was unable to locate the other plane, as it was in a hilly, wooded country, abundant with pines and small clearings.

After several minutes search in a gradually increasing turning circle, the pilot suddenly noticed a bright flash of light which struck him in the eyes and continued to follow him. Immediately, he investigated the cause of the flashing light and discovered the other plane. A safe landing was made in the same clearing. The men on the ground had seen the circling plane and, being powerless to communicate with it, Sergeant Caldwell suddenly hit on the novel idea of a mirror to attract the pilot's attention. Accordingly, he drew one from his pocket and was successful in his first attempt to attract the pilot's attention. The Pensacola plane returned the oil line to Pensacola, where it was repaired, and the following morning it was returned to the grounded plane, thus enabling it to continue on its way to Kansas City.

Thus another use has been found for a mirror aside from its value as a toilet article.

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MORE NAVIGATORS FOR 2ND BOMB. GROUP

The Navigation Unit, Langley Field, Va., has just turned over four fully trained navigators to the 2nd Bombardment Group, GHQ Air Force, and started the instruction of four more officers in this subject. Those completing the class are 1st Lieuts. F.E. Glantzberg, W.H. Higgins, D.M. Kilpatrick and P.G. Miller. Those assigned to the new class are 1st Lieuts. R.E. Koon, W.A. Matheny, C.H. Rees and E.P. Mussett. When the 2nd Bombardment Group is completely equipped with the Y1B-17 planes, the navigators will undoubtedly obtain ample practice in navigation on long flights.

BIG BOMBER DELIVERED TO LANGLEY FIELD

The 2nd Bombardment Group, GHQ Air Force, Langley Field, Va., received on March 4th the first of the Y1B-17 airplanes delivered to a tactical unit. The officers and men of the Group were drawn up in parade formation to welcome the first "Flying Fortress."

With Major Barney M. Giles and Captain C.E. O'Connor at the controls, the huge plane flew by in review twice, and then glided in for a perfect landing on a snow-covered field. The size of the plane was not fully realized until it taxied to its position on the ramp, between a B-10B and a PB-2A. Major General Frank M. Andrews, Commanding General of the GHQ Air Force, and Brigadier General Henry C. Pratt, Commanding General of the 2nd Wing, GHQ Air Force, were both present to welcome Major Giles, the plane and crew to Lagley Field.

On March 11th, Major C.V. Haynes delivered the second Y1B-17 to the 2nd Bombardment Group. The first one was assigned to the 96th Bombardment Squadron and the second one to the 49th Bombardment Squadron. At the time this was written, a crew from the 20th Bombardment Squadron was in readiness to depart for Seattle, Wash., to secure the third plane.

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SAFE LANDING SANS ONE LANDING GEAR

Luck and good piloting rode in the cockpit of one of the B-10B Bombers at Hamilton Field recently. Taking off for an Instrument Qualification Test, Lieut. Dale O. Smith, Air Corps, pilot, was notified by radio a short time later that one of his landing gears had fallen off. During the few moments after the warning was issued, the radio department had gotten in touch with the Commanding Officer, Colonel Davenport Johnson, who immediately rushed to the scene. By radio the Colonel and his aides issued instructions to the pilot and prepared to stand by for an emergency landing.

One of the wheels had stuck at about three quarters "wheels down" position, which tended to make the landing a dangerous one. After what seemed to be a century of waiting, the pilot started the plane on its downward path. Lower and lower it came until at the exact moment necessary for safety it hit. The wheel remained collapsed and the plane slid a few feet on its belly, slithering to a beautiful landing. Almost immediately the men were on the turf searching for fire.

The crew was composed Lieut. George F. Kinzie, co-pilot; Staff Sergeant R.F. Summers, Crew Chief, and Private Wiley C. Walters, Radio Operator.

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Items for the News Letter from March, Wheeler and Maxwell Fields are solicited.

YB-17 BOMBER LANDS AT BOLLING FIELD

SOARING majestically through the skies, the Army's new sovereign of the airways - the Boeing Bomber, YB-17 - circled Bolling Field on March 9th several times by way of heralding its arrival, and then came to a perfect landing on the new field to remain for a visit of inspection of four days.

A mutual tribute was paid in this landing. It was only fitting and proper that the Army's newest airplane creation should be the first to make an official landing on the new Bolling Field runways. This does not mean, however, that the new Bolling Field runways are in operation. While they are practically completed, there are no servicing or housing facilities for aircraft available. The old field will remain the official landing area until such time as funds are allotted by Congress for the necessary construction of technical buildings and they are completed. The Bomber's smooth landing proved, beyond the shadow of a doubt, that the new runways are perfectly equipped to accommodate any kind of aircraft.

Under the command of Lieut. Colonel Robert Olds, with Major Barney M. Giles as pilot, the "Big Ben of Bombers" was a most impressive spectacle in the air, with its powerful engines humming a tune of perfect rhythm. Once landed, it was taxied off the runway, properly secured and guarded by a quartet of sentries at all times.

Local newspapers featured the story of the plane's visit, and many hundreds of air minded citizens from Washington and vicinity came to view and pay tribute to its inspiring size, beauty and formidable fighting capabilities.

Several informal functions were held at the Officers' Club in honor of the visiting pilots, and the NCO Club held "Open House" for the picked enlisted men of Langley Field who comprised the crew.

On March 12th, at about 3:00 p.m., the great bomber again took to the air on its return trip to Langley Field, leaving Bolling Field personnel proud of both the visit and the unexpected "inauguration" of its new field.

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CAPITAL POLICE RECOVER STOLEN BALLOONS

Parking his automobile on a Washington street last week, Captain William H. Wenstrom, Signal Corps, Meteorological Officer of the 3rd Corps Area, stationed at Bolling Field, later returned to find that a box containing some four hundred balloons of the type used for weather observation had been stolenfrom his car.

By diligent effort on the part of the Washington police, the balloons were located in an abandoned stolen automobile.

AIRPLANES GAIN WEIGHT DURING FLIGHT
By the Hamilton Field Correspondent

The 9th Bombardment Squadron feels that they know the worst conditions for bombing, and as this Squadron completed bombing in accordance with TR 440-40 (Tentative) on February 20th and qualified only one bombardier, the following statement may have a concrete foundation. But first we would like to call to everyone's attention that these conditions are a bit "unusual" for this fair State of California.

We pride ourselves out here on knowing the place for each of nature's elements. This area being somewhat noted for the foggy conditions, we take these bad days in a willing, cheerful manner, but when Washington, Oregon and Northern California are in flames and a strong north wind is blowing, conditions may be said to be a little out of hand.

Knowing that it takes a little smoke or dust to bring on the gentle rains, we are naturally agreeable, but the feeling of rebellion was climaxed when slush floated around over the bombing targets in layers from the ground to eight thousand feet, and a pilot would land after a heart-breaking mission of two hours on instruments with his airplane weighing more than it did on the take-off. It may be advisable, if this sort of thing continues, that all airplanes in this area be equipped with flushing tanks for the purpose of bathing the various parts of our noble airplane.

It is also believed that if our opponents in any future engagements would add the essence of fir or the tang of mountain oak into their smoke screens, each and every combat man in this squadron would relaxwith the satisfied contentment of being at home again.

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5TH AIR BASE SQDN. A GROWING ORGANIZATION

Since the new allocation of 200 men to the 5th Air Base Squadron, Hamilton Field, Calif., business seems to have reached the peak. Paper is flying in all directions, and the Squadron as a whole have felt in many ways the need of a larger barrack and all accouterments. This squadron has received during the past week 114 recruits, bringing the Squadron count up to 434. Among these new men are to be found three sets of brothers, which seems to be a bit unusual to this correspondent, so we will delve into the facts of the case and add a few names to this bit of news. Privates Clyde F. and Elmer E. Hawes hail from Salem, Oregon. Privates John J. and Lyle B. Clemans are natives of Billings, Montana. Next in line are twins, i.e., Privates Milton D. and Milburn W. Raynor, of Dubois, Idaho. All of these men are recruits and they seem to enjoy the routine of Army life.

THE BOMBER B-THIRTEEN

(With apologies to that nonsensical old sea song, "A Capital Ship")

Oh, a capital ship for an aerial trip
  Was the bomber B-Thirteen.
No breeze that blew dismayed her crew
  Or troubled the captain's spleen.
So away she wheeled from the old home field
  On a mission far away;
And the home troops cheered as the old ship cleared
  At the speed of a one horse shay.

Chorus
  Then blow, ye winds, heigh ho!
  A-roving I will go!
  I'll not be found on solid ground
  So let the music play!
  I'm off by the morning light!
  And I won't be back till night!
  I'm off for a trip in an aerial ship
  A thousand miles away!

The gunner we had was apparently mad
  For the fare he fed his guns
Was a pound or three of T.N.T.
  Mixed up with a few stale buns.
His shots were as wild as a wayward child
  But his bullets roared afar;
They were every bit as likely to hit
  Their mark as the morning star.

Our bomber thought that the thing most sought
  Was a detonating blast;
And whether it blew in the ground or the blue,
  Was a question he never asked.
His bombs plunged down on a friendly town
  Or a hostile rampart grim;
And the havoc they wrought was often as naught
  To the hell that was raised with him.

Our radio op talked endless shop
  On the ground and in the air.
When the terminal fort sent a weather report
  He was always tuned elsewhere.
His voice was as raw as a black crow's caw
  When it caws at the rising moon,
And the usual tone of his microphone
  Was the ring of a small spitoon.

The old ship's prow was pointed now
  At the mountains dour and dree,
And the ridges rose beneath her nose
  Like the waves of a monstrous sea.
But one by one, in the dimming sun,
  They slowly dropped astern,
As the pilots twain with might and main
Spun wheel for a bank or a turn.

The captain sat on his folding hat
  And his pants of olive brown,
For he wanted to wear them both to the fair
  When the good ship got to town.
He was old and gray, and had got that way
  In his service through the years;
But his eyes were as true as the ocean's blue
  And he knew no silly fears.

As they droned along to the motor's song,
  The sky, that had been clear,
Was dimmed by the shrouds of drifting clouds,
  Which warned that a storm was near.
The dark clouds grew in the western blue
  To a wall that towered higher,
'Till the leaden pall of the thunder squall
  Was split by the lightning's fire.

The pilots heaved as the old ship weaved;
  They called on the interphone.
But the captain heard not a profane word
  And answer made he none.
The ship plunged down like a tumbling clown
  And up like a free balloon;
And the lightning flared till no one dared
  Look out in the leaden gloom.

They were flying blind in a bitter grind
  When the lashing hail began;
And it tore the wings into shreds and strings
  All along their straining span.
But a fierce upblast caught the ship at last
  And tossed her aloft bewhiles.
She was in a dive, but that great updrive,
  It carried her up for miles.

Up there in the rime was an Arctic clime,
  And the wings glazed over with ice;
And the motors true at last they knew
  The grip of a frigid vise.
They sputtered and died in that cloudland wide
  Where the lightning flashed between;
And the thunder rolled through the silence cold,
  And down went the B-Thirteen.

She dropped in a dive that none could survive
  And the pilots ordered all hands
To review their sins and jump for their skins
  Ere she crashed on those mountain strands.
The gunner fell like a devil towards hell
  As he hugged his beloved gun,
And the bomber followed in the path he hollowed,
  And the others, one by one.

Then last of all did the pilots fall,
  Well clear of the plunging craft;
And they thought, too late, of their traveling mate
  Of the captain, wedged back aft.
They watched the ship on its downward trip,
  And pulled on their parachute rings;
And the strong cloth spread over every head
  So they drifted on silken wings.

They watched the careen of the B-Thirteen,
  And they wept for the captain's fate.
For the clouds now broke like dissolving smoke,
  And the sun shone through in state.
The ridges rose beneath her nose
  Like the horns of an angry bull,
And with senses numb for the crash to come,
  They watched, and their hearts were full.

But wait! That plane was flying again
  And ahead of her, plain to see,
Was the welcome yield of a mountain field
  Where the forest used to be.
She turned from her glide to neither side
  As she settled smoothly to earth;
And she rolled to a stand on that level land
  As snug as a bug in a berth.

In that selfsame clearing the others were nearing
  The ground, when they gasped to hear
The captain roar from the after door
  Like a bull with a bee in his ear.
"You boobs," he yelled, "this crate has held
  Through worse storms, in her prime.
She flies as nice with wings of ice,
  As with fabric, any time."

V-7267, A.C.

Biographies

LIEUT. COLONEL HENRY J.F. MILLER

Lieut. Colonel Henry J.F. Miller, Air Corps, now on duty as Commanding Officer of Brooks Field, Texas, and the 12th Observation Group, was born in Salem County, N.J., September 10, 1890. He attended public schools in Philadelphia; was a student at Blair Academy, Blairtown, N.J., for one year; at the Preparatory Academy at Highland Falls, N.Y., for two years, and at the Kansas State Agricultural College, Manhattan, Kansas, for one year, when he was appointed a cadet at the United States Military Academy, West Point, N.Y.

Following his graduation from the Military Academy, June 12, 1915, Colonel Miller was commissioned a second lieutenand and assigned to the 11th Cavalry. He served with his regiment at Fort Oglethorpe, Ga., September 12, 1915, to March 12, 1916; with the Punitive Expedition into Mexico, March 18, 1916, to February 1, 1917; and at Camp Stewart, El Paso, Texas, February 5 to April 15,1917. From April 22 to July 1, 1917, he served with the 23rd Cavalry at Fort Oglethorpe, Ga.

Detailed to the Aviation Section, Signal Corps, he took flying training at the Signal Corps Aviation School at San Diego, Calif., in addition to serving as Assistant to the Engineer Officer of this School. From February 6 to April 1, 1918, he was on duty at Call Field, Wichita Falls, Texas, as Assistant to the Officer in Charge of Flying, following which he was transferred to Langley Field, Va., as Officer in Charge of Flying. In July, 1918, he assumed the additional duty of Engineer Officer of the School for Aerial Observers.

Assigned to the Handley-Page Training Depot No. 1 in October, 1918, he proceeded with this unit to England. He returned to Garden City, L.I., New York, on December 4, 1918, and was assigned to duty with the 1st Provisional Wing and as Commanding Officer of Roosevelt Field, L.I., New York. On February 3, 1919, he was detailed as Inspector of the 1st Provisional Wing. During the months of April and May, 1919, he was on duty with the Victory Loan Flying Circus, organized to stimulate the purchase of Government bonds. In October, 1919, he participated in the Transcontinental Reliability Test Flight. From March, 1919, to January, 1920, he was Officer in Charge of Flying at Hazelhurst and Mitchel Fields, N.Y., and from November, 1919, to January, 1920, he also commanded the 1st Aero Squadron.

From January 19 to February 26, 1920, Colonel Miller was on duty in the Information Section, Office of the Director of Air Service, and he then returned to Mitchel Field for duty as Commanding Officer of the 1st Provisional Observation Group. In June, 1920, he assumed command of the 5th Aero Squadron at Mitchel Field. From September to November, 1920, he performed additional duty as Acting Air Officer of the 2nd Corps Area. From December 1, 1920, to April 5, 1921, he was on duty as Post Adjutant and Commanding Officer of the Air Service Supply Detachment at Mitchel Field.

Transferred to Kelly Field, Texas, Colonel Miller commanded the 2nd Bombardment Group at that station from April 20 to May 16, 1921, when he was transferred with troops to Langley Field, Va., at which station he served as Assistant to G-3, 1st Provisional Air Brigade, to October, 1921. He then returned to Kelly Field and again took up the duties of Commanding Officer of the 2nd Bombardment Group. In March, 1922, he was assigned to station at Fort Knox, Ky., for duty as Assistant Adjutant, 5th Army Corps, and in charge of of Air Service personnel.

During July and August, 1923, Colonel Miller was on temporary duty at Wilbur Wright Field, Ohio, commanding a training camp for Reserve officers. He assumed command of Grissard Field, Cincinnati, Ohio, August 1, 1923, and until April 2, 1924, was on duty with the Organized Reserves of the 5th Corps Area and Executive Officer of the 417th Pursuit Squadron. From April, 1924, to March, 1926, he was on duty in the Office of the Chief of the Militia Bureau, Washington, D.C. His next station was Luke Field, T.H., where he served as Commanding Officer of the post and of the 5th Composite Group until August, 1926; as Executive Officer of the post and Group to December 4, 1926; as Commanding Officer of the 4th Observation Squadron, Wheeler Field, T.H., to January 11, 1927, and as Commanding Officer of the 18th Pursuit Group, Wheeler Field, T.H., to April 12, 1929.

Colonel Miller returned to Langley Field, Va., June 10, 1929, for duty with the 2nd Bombardment Group. In August of that year he took up his duties as student at the Air Corps Tactical School at that station. Upon his graduation from this School in June of the following year, he took a two-year course of instruction at the Command and General Staff School at Fort Leavenworth, Kansas. Assigned to station at Brooks Field, Texas, he served as Executive Officer of the post and the 12th Observation Group, and at various times temporarily commanded the post and the Group.

For about a year, Colonel Miller was on

At the old home fort an official report
Went forward to Washington;
And the medal looked well on the captain's lapel,
Where the President pinned it on.
And everyone said that a hero was made,
But the truth was otherwise --
In that stormy deep he had been sound asleep,
Not once had he opened his eyes!

- William H. Wenstrom.

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WELL KNOWN FLYER TAKES POSTMAN'S HOLIDAY

Second Lieut. Joseph C. Mackey, Air Reserve, acrobatic pilot and sky writer extraordinary, has recently completed a 14-day tour of active duty with the Air Corps Detachment at Port Columbus, Ohio.

In civilian life, Lieut. Mackey heads his own Flying Service at Findlay, Ohio, and holds an advertising contract with a prominent mid-west oil company. Thousands have acclaimed his prowess as a "stunter" during the past few years. At the Miami Air Races in 1936, he was awarded the Freddie Lund Trophy for acrobatic flying, after placing second in the International Air Show event at Paris, France, earlier in the year.

Lieut. Mackey reported that his fourteen days with the Military were well worth while. Particularly so were his flying hours in the new North American BT-9A's (not stunting).

"I value very highly the training I have received at Port Columbus, especially the instrument, radio beacon and tactical flying I had with the latest types of Army Air Corps equipment. With my own planes, practically all of my time is spent in keeping the up-side-down carburetors well lubricated and in checking the tensile strength of my safety belts," stated Lieut. Mackey upon his return to Inactive Duty status.

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COLORFUL CEREMONY FOR PRESENTATION OF TROPHIES

All squadrons of the Air Corps Advanced Flying School, Kelly Field, Texas, were on Saturday morning, March 13th, formed in a hollow square on the ramp in front of Post Operations. Colonel Arnold N. Krogstad, Commandant of the Advanced Flying School, presented four medals to 1st Lieut. Charles F. Densford, Air Corps, with the following remarks:

"Lieut. Densford, it gives me great pleasure to present to you, on behalf of the Michigan State Rifle Association, these four beautiful medals for proficiency in Pistol Competition. These medals are not only of intrinsic value, but indicate that you possess a skill in pistol shooting which represents years of effort on your part and reflects great credit on you, the U.S. Army, and the Air Corps, of which you are a representative."

These medals were won at the Michigan State Rifle Matches, held from July 4th to 12th, 1936, in matches as follows:

1st Prize for Rapid Fire with Pistol.
2nd Prize for Individual .38 Pistol Match.
3rd Prize for Individual .22 Caliber Pistol Match.
1st Prize for Individual Grand Aggregate Score with Pistol.

Colonel Krogstad then presented blue zipper type jackets, having on them a large yellow letter "K," standing for Kelly Field, to the members of the Post Football Team, with the following remarks:

"While we did not win any championship in football last fall, we did have a team representing Kelly Field. It isn't necessary to win a championship to have a successful season. The members of our team had the spirit to win and acquitted themselves in a worthy manner. They worked hard to give the rest of us enjoyment, and it is in recognition of this spirit of endeavor that we are presenting awards today."

The following men received jackets:

L.F. Anderson
G.H. Geaslin
H.W. Beare
L.F. Wallace
R. Flagler
V.L. Harrison
C.L. Sommers
E.C. Lewis
J.A. Sauer
D.H. Smith
O. Howard
S. DeFan
P.E. Patton
C.K. Russell
G. Collins

The News Letter Correspondent states that 1st Lieut. E.J. Timberlake, Jr., deserves a lot of credit for his work as coach of this team.

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DUTY ASSIGNMENTS OF ADVANCED FLYING SCHOOL STUDENT OFFICERS

The following-named Air Corps officers, now on duty as students at the Advanced Flying School, Kelly Field, Texas, and who are specializing in Observation Aviation, were, under Special Orders of the War Department recently issued, assigned to duty at the stations indicated upon the completion of their present course of instruction, viz:

Lieut. Colonel Laurence F. Stone and Lieut. Colonel Raymond E. O'Neill (Major) to March Field, Calif.

Major Walter J. Reed to Langley Field, Va.

Captain James F.J. Early to Langley Field, Va.

Captain Howard H. Couch to Mitchel Field, N.Y., for duty with 97th Observation Squadron.

Major George G. Lundberg (Captain) to Middletown Air Depot, Pa.

Captain John P. Kirkendall to the Hawaiian Department.

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STUDENTS ASSIGNED TO AIR CORPS TECHNICAL SCHOOL

First Lieut. Clayton E. Hughes has been assigned to duty as student in the Airplane Maintenance Engineering course at the Air Corps Technical School, reporting not later than August 15, 1937. First Lieut. George F. Hartman and 2nd Lieut. Charles B. Harvin are under orders to report to this school not later than September 19, 1937, for duty as students in the Communications course, while 1st Lieut. John C. Kilborn, of Randolph Field, is to report for duty as student in the Armament course.

The orders assigning 1st Lieut. John C. Horton, of Randolph Field, for duty as student in the Armament course at the Air Corps Technical School have been revoked.

TRAINING QUESTIONNAIRE

THE Base Intelligence Officer, Selfridge Field, Mich., submitted copy of a "Training Questionnaire" covering a written examination recently conducted by each flight commander of the First Pursuit Group. He states that it is planned by the Group Commander to give similar examinations to all pilots semi-annually as a means of furthering the efficiency of individual pilots. The scope of this examination was, substantially, as follows. Some of the questions, being of a somewhat confidential nature, are here omitted.

1. The duties of S-1, S-3, S-4, and the Engineer Officer.

2. Show by diagram, with approximate distances specified, of normal flight formation and squadron normal formation.

3. Definition of Pursuit Aviation.

4. Procedure of Flights A and B in initial phase of squadron attack on 9 Bombardment planes formed in defensive formation.

5. Explanation of meaning of terms "Readiness," "Alert" and "Stations."

6. Significance of the signals Fishtail or Yaw; series of small dives or zooms; rock wings; leader dips wing to right when in an echelon of individual planes to the right; leader dips wing to the left.

7. Name two Class I and Class II supplies, and what are Class IV A and Class IV E supplies?

8. Procedure of pilot in event of forced landing across border.

9. How often do pilots take blind flying test.

10. What are qualifying scores in Pursuit Gunnery for Expert Aerial Gunner; 1st Class and 2nd Class Aerial Gunner?

11. With altitude of ceiling 2,000 feet and plane is just on top of the overcast at 6,000 feet, give procedure to bring it down through the overcast and land on a completely equipped airdrome.

12. Name two duties of the Squadron S-2.

13. As specified in TR 190-10, Conventional Signs, the basic symbol for a troop unit is ▭. How would you indicate that the unit is Air Corps - an Air Corps squadron - a Group - a Wing - an Antiaircraft Battalion?

15. In preparing for an inspection of airplanes preceding a review, what is the interval between airplanes and what may be the interval between flights and squadrons. Where is the parachute displayed on P-26 airplane. Where do the maintenance and combat crews take post?

16. What were some of the discrepancies noted in last 40-hour inspection of the airplane to which you are assigned as the combat crew?

17. Approximately how many hours before the next 20-hour check is to be made of the airplane to which you are assigned as the combat crew?

18. How much time was spent with maintenance crew during the last 40-hour inspection?

24. In a gas attack, why is it so important to have overhead cover of some kind?

25. Ammunition carried in P-26 airplane and how many quarts of oil in tank.

26. What altitude is used as a basis for aircraft reporting their altitude?

27. At what altitudes will aircraft fly on a true course from 0 degrees to 180 degrees, but not to include 180 degrees? From 180 degrees, but not to include 360 degrees?

28. Aircraft flying along and parallel to a designated civil airway shall fly where with respect to the "on course" signal?

29. Inbound planes shall fly where with respect to the radio ranges of a landing field?

30. Outbound planes shall fly where with respect to the radio ranges of a landing field?

31. At what altitude shall aircraft fly when crossing an airway and at what angle shall it be crossed?

32. What are the necessary radio contacts for approaching and departing from a landing field that has a control station?

33. What are the restrictions for approaching airports, with considerable traffic, without having radio (two way) in the ship?

34. May aircraft be flown below 2,000 feet in good weather for contact flying?

35. In flight, where could one find the frequency and call letter for any station on the airways?

36. Explain the difference between a hooded instrument flight and an intentional instrument flight and what are their restrictions.

37. After departure, how may a flight plan be changed with and without a radio in the airplane?

38. During a mass flight, how many airplanes should have their transmitters set on 3105 kilocycles?

39. What is the frequency for airplanes going on individual cross-country flights?

40. May intentional instrument flights be made along civil airways?

41. What are emergency altitudes, and by whom are they used?

42. What is the average maximum range of the SCR-183 radio transmitter?

43. Under what conditions are the following maneuvers permitted on a single-place Pursuit airplane - Inverted flight - normal spin - inverted spin.

44. What item of pilot's equipment must be carried during night flying in addition to the pilot's normal equipment?

45. What is the significance of the white traffic control light, A.C. type B-1A, to the pilot taxying on airdrome?

duty as Air Officer of the 6th Corps Area. He returned to Brooks Field on October 16, 1935, since which time he has commanded the post and the 12th Observation Group.

Colonel Miller received his promotion to 1st Lieutenant, July 1, 1916; to Captain, July 25, 1917; to Major, March 17, 1925, and to Lieut. Colonel, November 1, 1936. He held the temporary rank of Major of Cavalry, August 8, 1918, to March 15, 1920; and that of Lieut. Colonel, June 18 to October 15, 1935; October 29, 1935, to November 1, 1936. He holds the flying ratings of Airplane Pilot and Airplane Observer, and is on the General Staff Corps eligible list.

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LIEUT. COLONEL HUBERT R. HARMON

Lieut. Colonel Hubert R. Harmon, Air Corps, now on duty as Commanding Officer of the 19th Bombardment Group, GHQ Air Force, March Field, Calif., was born at Chester, Pa., April 3, 1892. After attending the Polytechnic Preparatory School in Brooklyn, N.Y., for two years, he was appointed to the U.S. Military Academy, West Point, N.Y., from which he graduated June 12, 1915, whereupon he was commissioned a Second Lieutenant, Coast Artillery Corps. He served at Fort Monroe, Va., from September 12 to November 30, 1915; at Fort Andrews, Mass., to May 4, 1916; at Plattsburg, N.Y., as Adjutant of camp for Regular troops and Assistant Adjutant, Business Men's Training Camp, May 6 to October 8, 1916; and again at Fort Andrews, Mass., to November 24, 1916.

Attached to the Aviation Section, Signal Corps, he was a student at the Signal Corps Aviation School at San Diego, Calif., from December 8, 1916, to May 20, 1917. He was rated Junior Military Aviator to date from June 21, 1917.

Transferred to Fort Sam Houston, Texas, Colonel Harmon was recorder of the Aviation Examining Board at that post and Assistant Air Officer, Southern Department, to September 12, 1917. From September 13 to 26, 1917, he was stationed at Kelly Field, Texas, where he organized and served as Commandant of the Ground Officers' Training School. From September 26, 1917, to January 3, 1918, he was on duty as Department Aeronautical Officer, Southern Department, following which he was assigned as Engineer Officer of Kelly Field No. 2, San Antonio, Texas. On March 4, 1918, he was transferred to Taliaferro Field No. 2, Fort Worth, Texas, as Executive Officer.

From April 1 to September 3, 1918, Col. Harmon was Officer in Charge of Flying at Barron Field, Everman, Texas. He was then ordered to duty overseas and, following the completion of advanced training in Pursuit Aviation at the Third Aviation Instruction Center, Issoudun, France, he was, on January 5, 1919, assigned to duty as Chief of Staff to the Army Air Service Commander, 3rd Army, Coblenz, Germany, in which capacity he served until September 23, 1919. From September 26, 1919, to October 18, 1920, he was on duty as Aviation Officer, U.S. Liquidation Mission, Provisional District of Great Britain, London, England.

Returning to the United States, he was, on October 30, 1920, assigned to duty as Assistant Executive, Office of the Chief of Air Service, Washington, D.C., serving in that capacity until June 30, 1924. From October 28, 1921, he performed additional duty as Junior Aide at the White House, and as a member of various boards.

From July 1 to August 14, 1924, Col. Harmon was stationed at Bolling Field, D.C., following which he was transferred to McCook Field, Dayton, Ohio, for duty as student at the Air Service Engineering School. Upon his graduation, August 20, 1925, he returned to duty in the Office of the Chief of the Air Service, serving as Assistant Chief of the Information Division to March 10, 1926, and as Chief of that division until February 22, 1927. During his service in Washington, he also performed additional duty as White House Aide.

From March 5, 1927, to May 22, 1929, Colonel Harmon was on duty as Assistant Military Attache for Aviation at the American Embassy, London, England. He was then assigned to duty in the Department of Tactics, United States Military Academy, West Point, N.Y. In August, 19 1932, he was transferred to Maxwell Field, Ala., for duty as student at the Air Corps Tactical School. Following his graduation from this School in June, 1933, and from the Command and General Staff School, Fort Leavenworth, Kansas, in June, 1935, he was assigned to station at March Field, Riverside, Calif., where he was on duty as Executive and Operations Officer of the First Wing, GHQ Air Force, until August 17, 1936. He was then assigned to his present position as Commander of the 19th Bombardment Group.

Colonel Harmon was promoted to 1st Lieutenant, July 1, 1916; to Captain, May 15, 1917; to Major, February 14, 1925; and to Lieut. Colonel, October 1, 1936. During the War he held the temporary rank of Major, and from August 13, 1935, to October 1, 1936, he held the temporary rank of Lieut. Colonel. He holds the flying ratings of Airplane Pilot and Airplane Observer, and is on the General Staff Corps eligible list.

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Under Special Orders of the War Department, recently issued, Colonel Albert L. Sneed, Air Corps, will proceed to Maxwell Field, Montgomery, Ala., for duty upon the completion of his tour of duty in the Philippines.

46. What is the minimum altitude at which military aircraft may fly over the White House in Washington?

47. You are 2nd Lt. A on a cross-country flight to Boston. Captain B, commanding the Air Corps Detachment, wants to take your airplane for a short local flight. What are your rights in the matter?

48. In applying for an extended cross-country flight, what two principles should guide the pilot in his choice of routes and airdromes for overnight stops?

49. What is the prescribed method to change from one source of fuel supply to another while in flight?

50. How can the proper setting of the fuel cock be determined?

51. What two precautions must be observed when using flaps for landing?

52. What precaution must be observed when retracting flaps immediately after take-off or when near stalling speeds?

53. What are the indications of ice formation in the carburetors?

54. Under what conditions is ice most likely to form in induction systems of engines?

55. What precaution should be taken to prevent ice formation in carburetors when flying under icing conditions?

56. What method may be used as a last resort to clear the ice from a carburetor?

57. What is the proper use of the throttle when starting an engine?

58. What is the proper method of using the mixture control to conserve fuel or to obtain maximum power at altitudes?

59. What may result from using an excessive amount of mixture control in the operation of air-cooled engines?

60. What five steps must be taken in stopping an aircraft engine?

61. What method should be used in stopping a fuel injector engine?

62. Why must the manifold pressure be reduced or the RPM decreased when checking magnetos?

63. What degree of accuracy can be expected with the type C5 (Kollsman Sensitive) altimeter?

64. How is pressure altitude obtained from a station altimeter?

65. What is pressure altitude variation?

66. What precautions must be taken when using below specification fuel, obtained for emergency use?

67. What action should be taken at earliest opportunity after use of lower than Air Corps Specification fuel?

68. What conditions of oil temperature and pressure must be obtained before full throttle operation?

69. What are the minimum altitude and maximum airspeed at which it is considered safe to release the M8 parachute flare?

70. What is the approximate area effectively lighted by an M8 flare when released between 1,000 and 3,000 feet?

ELIGIBLES FOR W.O. APPOINTMENT

The Adjutant General's Office, War Department, published a pamphlet showing, as of March 1, 1937, the names of noncommissioned officers who recently passed the examination for appointment as Warrant Officer of the Army, these names being placed on the eligible list in order of length of service in the Army, from which vacancies in the grade will be filled.

Of the 740 names of noncommissioned officers on the eligible list, 114 are members of the Army Air Corps - slightly over 15 percent of the total number of eligibles. Since the publication of this eligible list, a total of 67 noncommissioned officers received appointment to the grade of Warrant Officer, including six from the Army Air Corps. Consequently, the noncommissioned officer who was No. 68 on the list is now No. 1 thereon.

The first Air Corps noncommissioned officer now on the eligible list is Master Sergeant Charles Budoff, who was originally No. 77 and who is now No. 10.

The Air Corps noncommissioned officers on this list, together with their position thereon, appear below, as follows:

No.	Name
77	Master Sgt. Charles Budoff
85	Master Sgt. Charles Maylon
102	Master Sgt. Nico G. Loupos
108	Technical Sgt. Richard Rogers
141	Technical Sgt. Ruben St. John
146	Technical Sgt. Edcil C. Maxwell
169	Master Sgt. Harvey H. Hewitt
182	Master Sgt. Charles C. Leiby
188	Master Sgt. Murton K. Morrill
190	Technical Sgt. William J. Riley
198	Master Sgt. Gervais J. Garner
205	Master Sgt. Harry Wilson
213	Master Sgt. Walter Johannsen
217	Master Sgt. James D. Mehegan
219	Staff Sgt. Jacob S. Brown
223	Master Sgt. Carlton P. Smith
235	Master Sgt. Thomas J. Kelly
239	Master Sgt. Clarence Haymes
247	Staff Sgt. Anthony Groves
260	Master Sgt. William H. Folz
271	Master Sgt. Stewart C. Smink
276	Technical Sgt. [illegible] M. Johnson
282	Master Sgt. Robert [illegible]. Travis
284	Master Sgt. Chester F. Colby
285	Master Sgt. Floyd B. Haney
286	Master Sgt. Olin Brown
293	Technical Sgt. Clyde W. Doyell
302	Master Sgt. David T. Murphy
316	Master Sgt. John W. Frazer
319	Staff Sgt. Paul D. Bennett
342	Master Sgt. Alvan Killgore
343	Staff Sgt. Chauncey L. Anderson
357	Master Sgt. Joe M. Cates
358	Master Sgt. Samuel J. Davis
359	Technical Sgt. William V. Apple
361	Master Sgt. Arvin E. Miller
363	Technical Sgt. Wallace H. Williams
366	Technical Sgt. Thomas L. Willison
369	Master Sgt. Bernard Wallace

No.	Name
370	Technical Sgt. Russell C. Peckham
371	Master Sgt. Boyd D. Ertwine
375	First Sergeant Steve Stanowich
382	Technical Sgt. John B. Von Euw
386	Staff Sergeant Emmett A. Mobley
404	Master Sgt. Ronald M. Short
413	Staff Sergeant Fred C. Brockhausen
425	Staff Sergeant John H. MacKenzie
431	Staff Sergeant William P. McQuillan
432	First Sergeant Robert Miller
433	Staff Sergeant Lemuel T. Payne
438	Staff Sergeant Floy L. Ashley
440	First Sergeant William L. Jones
444	Staff Sergeant David L. Fredenburg
457	First Sergeant C. N. Guttenberger
460	Sergeant Chas. C. Cunningham
461	Technical Sgt. Virgil Moore
462	Staff Sergeant Albert G. Gerlach
469	Staff Sergeant Oliver E. King
475	Sergeant Nelson E. Morgan
476	Technical Sgt. Artie L. Revert
481	Technical Sgt. Albert E. Freathy
491	Staff Sergeant Albert C. Bergis
493	Technical Sgt. Earl B. Redifer
494	Master Sgt. Julius A. Kolb
495	Master Sgt. Raymond A. Stockwell
496	Master Sgt. Albert V. Kanig
506	Staff Sergeant Henry W. Spiller
508	Staff Sergeant Harry A. Tunks
511	Technical Sgt. William E. Pope
523	Staff Sergeant Charles S. Segelbaum
525	Staff Sergeant Leslie K. Kingsley
533	Staff Sergeant Harry J. Pitre
535	Staff Sergeant Joseph Montgomery
537	Technical Sgt. Hugh J. Marth
539	Staff Sergeant George R. Boston
540	Staff Sergeant Sidney M. Rahn
543	Technical Sgt. Paul Grossman
545	Technical Sgt. William D. Croy
546	Staff Sergeant Clyde C. Liming
555	Technical Sgt. Henry H. Gray
556	Technical Sgt. Leo I. Herman
559	Staff Sergeant Manuel J. Novak
564	1st Sergeant Leo W. Axford
572	Staff Sergeant Raymond M. Bishop
573	Staff Sergeant Joseph B. Greswick
589	Staff Sergeant Almon S. Farrar
593	Staff Sergeant George H. Goodrich
596	Technical Sgt. Frank J. Siebenaler
600	Staff Sergeant Maurice M. Beach
601	Staff Sergeant Geyser W. Pulliam
609	First Sergeant Richard W. Hahn
614	Corporal Rudolph Lesnick
619	Technical Sgt. Albert G. Hewitt
620	Staff Sergeant Joseph Ducheane
626	Staff Sergeant Ralph Colby
628	Staff Sergeant Benjamin Harrison
635	Technical Sgt. Joseph R. Grey
652	Staff Sergeant Leonard Gilsen
662	Staff Sergeant Samson Smith
665	Staff Sergeant Robert N. Proudfoot
667	Technical Sgt. Theodore C. Totman
678	Staff Sergeant Thomas E. Arnold
681	Staff Sergeant Francis Ledoux
688	Staff Sergeant Milton H. Hawkins
691	Staff Sergeant Frank Bobulski
717	Staff Sergeant Edgar K. Hillman
721	Staff Sergeant Arthur Hanson
740	Staff Sergeant James C. Richardson

AERIAL GUNNERY DOESN'T WORRY FISHERMEN

Gunnery over the ocean! Blue and white waves breaking over the shoals and rocks of a rugged coast - and overhead a plane with a sleeve target drones by while another plane overtakes it from the rear. For an instant the peace and prosaic quietude is shattered by the cold chattering of a machine gun. But the fishermen in their tiny boats along the shore pay little heed - for 'tis an every day occurrence for them. They did take notice at first, and the boats would "up-anchor" and scamper away; but as the planes continued to fly back and forth between two fixed points, the planes became a part of the expected order of things.

In the 31st Bombardment Squadron, Hamilton Field, Calif., "Safety and Caution" have ever been the watchwords. One of the first rules observed is never to go to sea without having each member of the crew wearing a life-vest under his parachute and a pneumatic life raft in the belly of the ship. A second rule is to always shoot out to sea, and with a constant watch for boats in the direction of fire. A third rule that the Squadron observes is that cross-under courses be made only with the plane in level flight and not in a banking turn. It has been found that even the best pilots sometimes gain and lose altitude in banks. An unconscious gain in altitude while crossing under the steel tow line is apparently unhealthy - hence the rule for the fixed angle intersection of courses.

In an effort to maintain the GHQ Training Schedule with the three airplanes available to this Squadron, the engineering section has kept these ships in commission for flying every day. This has meant hard and efficient work. Inspections have been "pulled" after dark and repairs made late in the night in order that when eight o'clock the following morning rolls around the ships would be ready to take to the air.

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SHIFTS IN AIR DEPOT COMMANDERS

Colonel Lawrence S. Churchill (Lieut. Col.), Air Corps, commanding the Middletown Air Depot, Middletown, Pa., is under orders to proceed to Langley Field, Va., for duty. Colonel Jacob W.S. Wuest, who has been in command of the Rockwell Air Depot, Coronado, Calif., is under orders to proceed to Middletown, Pa., to assume command of the Air Depot. Lieut. Colonel Harold A. Strauss, who for a number of years has been Chief of the Procurement Section of the Air Corps Materiel Division, Wright Field, Dayton, Ohio, succeeds Colonel Wuest as Commanding Officer of the Rockwell Air Depot. These changes go into effect this summer.

THE SOLDIER IN THE ARMY

COLONEL Henry B. Clagett, Air Corps, Commanding Officer of Selfridge Field, Mt. Clemens, Mich., recently addressed about 150 recruits of less than one year's service who had gathered in the Post Theatre. He dwelt on the various phases of the life of a soldier, starting from the entrance into the service, the period of transition between that of a civilian and a soldier in which the former becomes acclimated to the life of a soldier, the advantages of the Army to the individual, the education he can receive which will benefit him in his career as a soldier or as a civilian after his enlistment has expired, the advantages the Army offers as a career, the necessity of discipline, and the services they render to their country, to their family, and to themselves.

Colonel Clagett emphasized the elaborate school system of Selfridge Field, whereby the young soldier could elect to pursue a definite training. There are many vocations offered in the school system of Selfridge Field, none of which are different than those pursued in civil life. Should the soldier pursue any one of these courses in a conscientious and thorough manner, he would be qualified, upon the expiration of his term of enlistment, to step out into civil life with a journeyman rating in such vocation and take his place amongst the best mechanics of his kind.

Emphasizing the military training given to the soldier, Colonel Clagett stressed the point where a man schooled in the art of discipline and soldierly attributes was assured of becoming a success in the Army or in civil life.

Having learned the principles of discipline, the soldier, upon expiration of his term of enlistment, can step out into civil life and take his place in society as a trustworthy and honest citizen.

Colonel Clagett also emphasized the necessity of the soldier's conduct, particularly when in the presence of civilians and away from the military reservation, so that nothing but the finest credit could be reflected upon the service.

His address was most interesting, as evinced by the attention and enthusiasm given to him by his audience.

Colonel Clagett is a soldier of over 36 years' service, and his remarks were based upon these years of experience. He has always evinced a great deal of interest in the welfare of the soldiers of his command, and particularly looked out for the welfare of the young soldier or recruit. He has made himself available to these young soldiers for advice or any instructions that they might seek, and has instilled into his officers and older soldiers this same spirit of friendliness towards the young man just entering on a military career.

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VISIT TO SELFRIDGE FIELD BY HIGH SCHOOL AVIATION CLUB.

Mr. Paul B. Hartman of the Department of Industrial Arts of the Devilbiss High School, Toledo, Ohio, received a letter from Army Air Corps officials at Selfridge Field, Mt. Clemens, Mich., stating that they would be very happy to have the students of that school as their guests on an inspection tour of the Air Base. Accordingly, the Aviation Club of the Devilbiss High School announced plans for a pilgrimage to Selfridge Field on March 30th.

It was arranged for pilots of the Regular Army Air Corps units to act as guides for members of the club during their tour through various machine shops, maintenance, repair and assembly hangars, and while inspecting and observing the actual training of the fighting airplanes and their crews of the famous First Pursuit Group.

The units at Selfridge Field have probably more historical interest for the visitor than any other such group in the country. All the squadrons at Selfridge participated in battles of the World War in France. Almost every famous American "Ace" served as a member of this Group in the World War days, among them being Captain Eddie Rickenbacker; Major Raoul Lufbery; Frank Luke, the "Balloon Buster;" Reed Landis, son of the well known Judge Kenesaw Mountain Landis; Wilbur White; Major Frank O'D. Hunter, and many others.

Famous mementos of the World War days are still exhibited and highly prized by the present personnel of the First Pursuit Group.

Selfridge Field is also the scene of the Army's famous annual Mitchel Trophy Race, which is open only to pilots of the First Pursuit Group and which has attained great fame not only as the oldest established air race in the world but also as the safest, since even though these races are flown with military fighting aircraft not a single participant has ever been injured since this contest for the John L. Mitchell Trophy was inaugurated in 1922.

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Colonel Arthur G. Fisher, until recently Commandant of the Air Corps Tactical School, Maxwell Field, Ala., assumed command of Scott Field, Ill., on March 22nd.

Obituaries

First Lieutenant Carlyle W. Phillips, Air Corps, lost his life in an airplane accident at Greenville, Ala., March 16, 1937. Born April 22, 1908, in Missouri, he graduated from the United States Military Academy, West Point, N.Y., in June, 1933, and was commissioned a second lieutenant of Field Artillery. Assigned to the Air Corps for flying training, he graduated from the Primary Flying School, Randolph Field, Texas, June 30, 1934, and from the Advanced Flying School, Kelly Field, Texas, October 13, 1934, and was rated as Airplane Pilot and Airplane Observer as of that date. He specialized in Observation Aviation.

Lieut. Phillips' first duty assignment as an Air Corps officer was at Luke Field, T.H., with the 50th Observation Squadron, and performed successively the functions of Communications Officer, Assistant Engineer Officer and Assistant Armament Officer. Upon the completion of his tour of foreign service, he was ordered to Scott Field, Ill., where he arrived last January and was assigned to the 15th Observation Squadron.

At the time of the fatal accident, Lieut. Phillips was piloting a C-24 Transport airplane from the gunnery range at Valparaiso, Florida, to Scott Field.

Staff Sergeant Thomas M. Stallings, Quartermaster Corps, who was stationed at Scott Field for the past five years, died of natural causes on March 14, 1937.

Sergeant Stallings, a native of Carthage, Tenn., first enlisted in the Army in 1904, serving with the 27th Infantry in Cuba, and later with the 113th Coast Artillery at Fort Hancock, N.J.

Transferring to the Quartermaster Corps early in 1918, he remained at Fort Hancock throughout the duration of the war, followed by service at Fort Benning, Ga.; Fort Davis, Canal Zone; the Presidio of San Francisco, Calif., and finally at Scott Field, where he reported in 1931.

At the age of 55, Sergeant Stallings had completed more than 28½ years of faithful service in the Army, and was due for retirement in a short time.

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GEN. ARNOLD TO SPEAK AT ARMY DAY DINNER

Brigadier General Henry H. Arnold, Assistant Chief of the Air Corps, has accepted the invitation of the President of the Department of Pennsylvania of the Reserve Officers Association of the United States to deliver an address on the occasion of the annual dinner at Pittsburgh, Pa., on Army Day. The patriotic bodies of Pittsburgh are associated together in the observance of this event.

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INSIGNIA OF THE 3RD AIR BASE SQUADRON

To the family of insignia of Selfridge Field, the Indian, the Owl and the Hawk, there has been added another. It is the insignia of the 3rd Air Base Squadron.

This newest insignia is composed of a spherical hornets' nest suspended from a tree limb. The nest is executed in tones of gray, so applied as to give the picture a third dimension. The whole is mounted on a circular field of slate blue, bounded by a thin margin of gold. The realistic touch is further enhanced by the addition of three "yellow jacket" wasps clinging to the opening of the nest.

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AERIAL GUNNERY PRACTICE AT CAMP SKEEL

The 17th Pursuit Squadron, Selfridge Field, Mich., spent the period from March 15th to 23rd, inclusive, in gunnery practice at Camp Skeel, located on Lake Van Etten near Oscoda, which is approximately 130 miles north of Selfridge Field.

Bad weather conditions cut down the actual days of target practice to six, but the same bad weather gave the men an excellent opportunity to test the new N-2 electric gun sights. Some very good scores, both on ground targets and sleeves were turned in. Little or no difficulty was encountered in starting the ships, even though the temperature fell below zero at times.

The 27th Pursuit Squadron will be the next organization to be ordered to Camp Skeel for gunnery practice, on March 30th. Fourteen airplanes and the following pilots will be included in the order:

Lieuts. Crabb
Barnett
Theobald
Jarrell
Kreider
Chennault
Todd
Bennett
Schrek
Bleyer
Quick
Cadet Helmick

A week's stay is frigidly anticipated.

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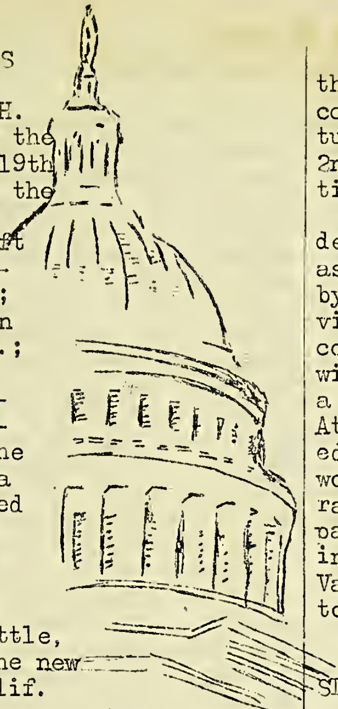
GENERAL BRANT DEPARTS FOR NEW STATION

An aerial review by the 3rd Wing was flown on the morning of March 13th in honor of General Gerald C. Brant, commanding the 3rd Wing, who was departing for Langley Field, Va., to assume command of the 2nd Wing. Previous to the review, General Brant presented the Harmon Efficiency Trophy to the 90th Attack Squadron.

In the evening, the General and Mrs. Brant were guests of honor at a farewell party at the Officers' Club. They carry with them to their new station the heartiest wishes of the entire command.

WASHINGTON OFFICE NOTES



Brigadier General Henry H. Arnold, Assistant Chief of the Air Corps, returned March 19th from an inspection trip to the West Coast. While on this trip he visited the aircraft plants of the Stearman Aircraft Co., Wichita, Kansas; the North American Aviation factory, Los Angeles, Calif.; the Northrop Corporation, Inglewood, Calif.; the Consolidated Aircraft Corporation, San Diego, Calif.; the Douglas Aircraft Co., Santa Monica, Calif.; the Lockheed Aircraft Corp., Burbank, Calif.; the Vulta Airplane Development Corporation, Glendale, Calif., and the Boeing Aircraft Co. at Seattle, Wash. He also inspected the new Air Base at Sacramento, Calif.

Major Lowell H. Smith, Chief of the Inspection Division, left March 28th on an inspection trip.

Recent visitors to the Chief's Office were Captain Benjamin W. Chidlaw, from Fort Leavenworth, Kansas; Major William W. Welsh, from Maxwell Field, Ala., and Captain John W. Warren, from Fort Benning, Ga., during the course of extended navigation flights.

Recent visitors from Langley Field were . . . Majors Otto G. Trunk Lawrence P. Hickey, and Edgar E. Glenn.

Major Robert Kauch made a ferry flight to Wright Field, March 27th.

Captain S.W. Towle, Jr., of the Personnel Division, left March 20th on a navigation flight to Chicago, Ill.

Major Malcolm C. Grow left March 27th on an inspection trip to Camp Lewis, Wash.

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90TH ATTACK SQUADRON WINS EFFICIENCY TROPHY

The Third Attack Group was honored on Saturday, March 13th, by the awarding of the Harmon Trophy to the 90th Attack Squadron of that Group. The Harmon Trophy had previously been presented to Barksdale Field by a group of Shreveport business men, in honor of Colonel Millard F. Harmon, first commanding officer of that field, with the suggestion that it be awarded annually to the organization having the highest efficiency rating.

Decision as to a suitable basis for making the award proved something of a problem, but a system was finally evolved which took into consideration the number of hours flown and the average number of airplanes in commission per number of airplanes assigned, also the number of forced landings during the calendar year.

Brigadier General Gerald C. Brant presented the Trophy directly to Captain William N. Amis, commanding officer of the 90th Squadron, who in turn passed it on to his Engineering Officer, 2nd Lieut. Charles H. Leitner, Jr. An inspection and an aerial review followed immediately.

The review was all but interrupted by a sudden rainstorm which almost obscured the field, as the 13th and 8th Attack Squadrons, followed by the 20th Pursuit Group, approached the reviewing stand. Despite the difficulties encountered, the review was completed as planned, with no greater discomfort to the pilots than a little browbeating from the rain. The 90th Attack Squadron, both commissioned and enlisted, standing on the ramp in full uniform, fared worse, receiving a thorough drenching from the rain. The prescribed attire for the farewell party in honor of General Brant, who was leaving for his new assignment at Langley Field, Va., was hurriedly changed from full uniform to optional dress.

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STATION ASSIGNMENTS OF TACTICAL SCHOOL GRADUATES

Under Special Orders of the War Department, recently issued, the following-named Air Corps officers are assigned to duty at the stations indicated, effective upon the completion of their present course of instruction at the Air Corps Tactical School, Maxwell Field, Ala.:

To Chanute Field, Ill.: Lieut. Colonel Lloyd N. Keesling (Major), Captain John K. Nissley.

To Middletown Air Depot, Middletown, Pa.: Major Ray A. Dunn.

To Langley Field, Va.: Major Clyde V. Finter, Captain Alva L. Harvey, 1st Lieut. Frank H. Robinson.

To Barksdale Field, Shreveport, La.: Major James M. Gillespie (Captain), Major Paul L. Williams (Captain), 1st Lieut. Bud J. Peaslee.

To Selfridge Field, Mich.: Major William C. Goldsborough (Captain),

To Mitchel Field, N.Y.: Major Ulysses G. Jones (Captain), Captain Joseph Smith.

To Scott Field, Ill.: 1st Lieut. Fay O. Dice, with 15th Observation Squadron.

To Hamilton Field, Calif.: Majors Harold A. Bartron (Captain) and Edward D. Jones (Captain).

To Office Chief of the Air Corps, Washington: Major Wallace G. Smith.

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WAR DEPARTMENT SPECIAL ORDERS

Changes of Station: To Bolling Field, D.C.: 1st Lt. Robert L. Fenton, from Randolph Field.

To Chanute Field, Ill.: Captain David J. Ellinger, from San Antonio Air Depot.

To San Antonio Air Depot: Captain George A. Whatley, from Kelly Field, Texas.

Retirement: Captain Isaac J. Williams, March 31, 1937, for disability incident to service.

Relieved from duty with Air Corps: 2nd Lieut. Leland R. Drake, from Air Corps Training Center to Philippines for assignment to duty with the Coast Artillery Corps.

Extension of active duty of Reserve Officers: 2nd Lt. Richard T. Black, now in Panama, to Nov. 15, 1939; 2nd Lt. Marion D. Unruh, now in Panama, to October 31, 1939.

A NEW DEAL IN PANAMA

By the News Letter Correspondent

FOR years the cry has been 'The trouble with Panama is you can't fly anywhere but up and down the ditch." But at last, to everyone's joy, this old cry has been relegated to the junk heap.

Through the combined efforts of Brigadier General George H. Brett, Lieut. Colonel B.G. Weir and Major George H. Beverly, the policy of no cross countries has changed to a policy of flights to as many countries as possible. No longer will Air Corps officers in Panama be green with envy of officers in the States taking 500 and 1,000-mile flights, and this is only the beginning.

On February 18th, fourteen ships from Albrook Field took off for a flight to Guatemala City. After gasing at David, the flight was on its way to Managua, Nicaragua, where we spent the first night of our journey. The next day, a "hop" of three hours put us in Guatemala City by noon, and everyone was amazed to find one of the most beautiful airport buildings they had ever seen. This three-hour 'hop" took us out of Nicaragua over El Salvador into Guatemala, and it was one of the most interesting flights we have had the pleasure of making. Four active volcanoes were passed, also many extinct craters, one of which was large enough to fly into and easily circle in its depths.

Guatemala is one of the most picturesque and historical cities it has been our pleasure to see, and everyone was disappointed in not being able to spend more time in seeing the sights. However, every camera in the flight worked overtime, and many excellent pictures were taken.

The following afternoon found us in San Jose, Costa Rica, another interesting city to which cross countries from Panama can be made by requesting ten days in advance. The next evening we were back at Albrook Field tired but satisfied that we had enjoyed every minute of the trip. We were royally welcomed at each stopping point and given the assurance that we would be welcome back at any time.

Another flight of nine ships is scheduled soon to take off for Lima, Peru, and several similar trips are planned in the next several months. The crust has been broken, boys, and all indications point to flights of this nature being a regular part of the training directive of the 19th Composite Wing in the immediate future.

These flights will not only be valuable training for all officers but will be highly interesting from a personal standpoint. Yes, we have a new deal in Panama, and I see no sad faces.

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AN ECHO FROM THE PANAMA FLIGHT

In flying from Miami, Fla., to Albrook Field, Canal Zone, nine Bombers, commanded by Major J.K. McDuffie, completed the longest over the water mass flight in the history of the Army Air Corps. The 1100-mile 'hop" was made in eight hours, and all 21 officers were in fine fettle upon landing at Albrook Field. The flight could not have chosen a more ideal time to come to Panama, as the Carnival Season was in full swing, and all visiting officers enjoyed it immensely.

The flight is another big step forward for the Army Air Corps and clearly shows the effectiveness of long range modern equipment. It demonstrates the mobility of a modern Air Corps and how distant points can be supported quickly and effectively by our Air Corps.

Panama and the large part of Central America, including the Caribbean Sea, is unfortunately afflicted with a wet season, which extends over a period from May to December. Since "Ole Man Weather" is still our most hated enemy, the immediate support of the Panama Canal would be seriously jeopardized during this season, but with the most modern radio equipment bad weather may also be whipped.

'The flight was a big event for Albrook Field, and in our small way we did our best to entertain everyone," says the News Letter Correspondent. "We hope our best was good enough, for we are waiting for another visit."

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First Lieuts. Frank F. Everest, Jr. and Harry E. Wilson are under orders for duty in Hawaii upon completion of their course of instruction at the Air Corps Tactical School, Maxwell Field.

HAWAIIAN HIGH SCHOOL STUDENTS VISIT LUKE FIELD

Luke Field was recently visited by 21 cadet officers of the Roosevelt High School ROTC, of Honolulu, accompanied by their instructor, Captain Harold J. Keeley, Infantry. The group was met on arrival by representatives of the 23rd and 72nd Bombardment Squadrons and were taken immediately to the hangars, where the different types of Bombardment airplanes were explained in detail. The bombing trainer was demonstrated, and brief lectures were given on machine guns, bombs, bomb racks and radio equipment.

The visit of the high school boys was concluded with a tour of the departments and shops of the Hawaiian Air Depot. They left the post at 12:00 noon after a visit which they claimed made a new high in their military instruction.

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The 15th Observation Squadron gunnery detail returned to Scott Field from its first visit to the Valparaiso Gunnery and Bombing Base near Valparaiso, Fla., on March 16th. Nine officers and 17 enlisted men fired the two observation courses with .30 caliber machine guns mounted in the O-46A Observation airplanes, and all but one, an enlisted man, qualified as Expert Aerial Gunners. The nine officers were Majors Walter T. Meyer, Raphael Baez, Jr., 1st Lieuts. James F. Walsh, Mark E. Bradley, William J. Bell, Carlyle W. Phillips, 2nd Lieuts. James V.G. Wilson, Air Corps, and 2nd Lieuts. Jack S. Hunt and Sylvester L. Fahey, Air Reserve.

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AIR CORPS
NEWS LETTER

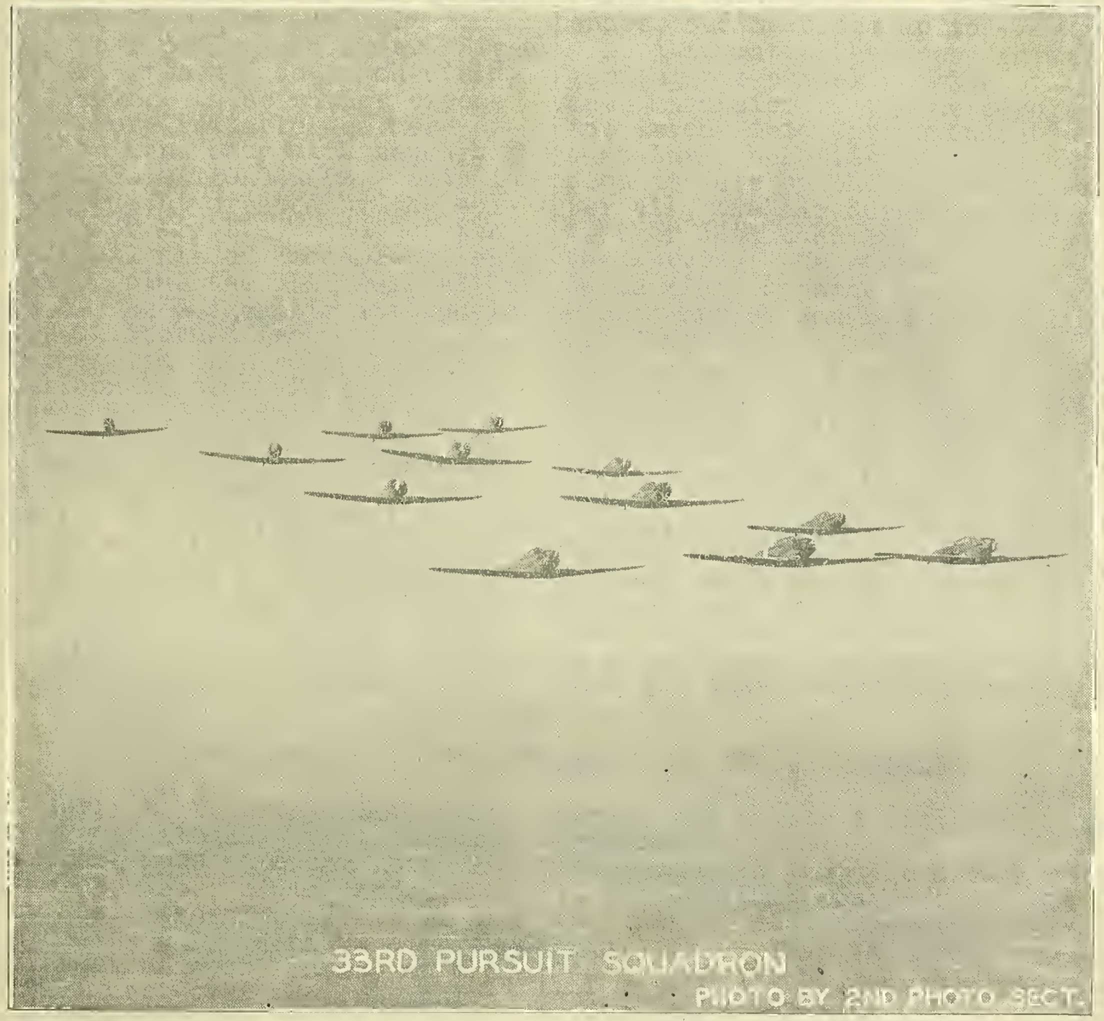
33RD PURSUIT SQUADRON

PHOTO BY 2ND PHOTO SECT.

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VOL. XX APRIL 15, 1937 NO. 8

VOL. XX
AIR CORPS NEWS LETTER
No. 8.
Information Division
Air Corps
April 15, 1937
Munitions Building
Washington, D.C.

The chief purpose of this publication is to distribute information on aeronautics to the flying personnel in the Regular Army, Reserve Corps, National Guard, and others connected with aviation.

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THE RADIO METEOROGRAPH

AT the present time, daily observation flights with planes are necessary to obtain weather data for the general use of the Army, Navy and Air Corps, especially so the latter. Daily "routine" flights from 15,000 to 18,000 feet are made by personnel from Kelly, Wright, Maxwell, Mitchel, Selfridge and many other fields.

According to Captain O.C. Maier, Signal Corps officer, attached to March Field, Riverside, Calif., these rather expensive and not very reliable weather flights can be done away with through the use of the RADIO METEOROGRAPH. This is a unique instrument created by the combined efforts of Mr. L.E. Wood, of the California Institute of Technology, and Captain Maier, plus the able suggestions of members of the Guggenheim Aeronautics Laboratory, California Tech.

The meteorograph is a robot weather man. A balloon is sent aloft, at altitudes between 35,000 and 45,000 feet. Attached to it is a small gondola, containing a small radio which "broadcasts" the measurements of temperature, pressure, relative humidity, as well as wind direction and velocity, at frequent intervals. The gondola of this complicated little machine carries two batteries, a miniature radio and the meteorograph. The total weight of the complete assembly is given as 425 grams. This may vary slightly, but will remain consistently less than one pound (453.6 grams). Experiments with the Meteorograph have been made and recorded since October, 1936. According to Captain Maier, the robot man made 24 ascents, none of them under 35,000 feet, and all of them without failure. The instruments worked perfectly, regardless of temperature differences, and recorded up to - 70° C.

No information has been forwarded regarding the actual working of the intricate mechanism of the Meteorograph, but the March Field Correspondent points out that large benefits could be derived from its use by the Air Corps since, after all, the Air Corps demands more weather data than any other branch of the service. He states that at present March Field obtains its daily observations through San Diego, and since planes are dependent on ceilings there is no one hundred percent assurance of regular and uninterrupted meteorological service. Furthermore, this miniature weather recorder could be sent aloft twice or three times daily for recording without much additional expense or trouble.

Inviting attention to the fact that Captain Maier and Mr. Wood had the meteorograph aloft for as long as three hours at one time, the March Field Correspondent adds that successful observations can be done within the hour mark or less and that the idea "seems well worth trying."

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CONTRACT AWARDED FOR ADDITIONAL BASIC TRAINING PLANES

The Hon. Harry H. Woodring, Secretary of War, announced recently that the contract heretofore made with the North American Aviation, Inc., of Inglewood, Calif., for basic training airplanes has been increased by a total of 73 airplanes and a complement of spare parts, at a total additional cost over the original contract of $903,380.99.

Forty of the above 73 airplanes are being changed from the original design in order to take a more powerful engine - the Pratt & Whitney R-1340 "Wasp." The remaining 33 will have incorporated therein certain necessary changes to provide for the training of pilots of the Air Corps Organized Reserve. These planes are being provided especially for the training of the Air Corps Organized Reserve, due to its importance in National Defense.

The changes from the design prescribed in the original contract are being made in order to fit these planes for use at points other than the Air Corps Training Center, for which the airplanes in the original contract are being procured.

By taking advantage of a contract already under way and making changes in the plane being produced, it has been possible to procure these airplanes at a material reduction in the total cost over that which would have been necessary had a special plane been developed for these purposes. The reduction in the number of types of aircraft has also materially simplified the problem of the aircraft manufacturing industry. Also, by taking advantage of a contract already in production, the War Department is able to secure delivery of the completed airplanes months before such delivery would be possible under a new contract.

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ADDITIONAL FLIGHT SURGEONS FOR THE ARMY

Five officers of the Medical Corps, U.S. Army, and one Medical Corps Reserve officer, who pursued a course of instruction in Aviation Medicine at the School of Aviation Medicine, Randolph Field, Texas, graduated on March 31, 1937, as Flight Surgeons, viz: Captains Henry C. Chenault, Barksdale Field, La.; Edgar L. Olson, Chanute Field, Ill.; 1st Lieuts. William F. Patient, Moffett Field, Calif.; Edward B. Payne, Selfridge Field, Mich.; Wayne R. Weaver, Randolph Field, Texas; and William B. Lovelace, of the Mayo Clinic, Rochester, Minn.

Diplomas were presented to the students by Brigadier General James E. Chaney, Air Corps, commanding the Air Corps Training Center, who was accompanied by Colonel Arnold N. Krogstad, Commandant of the Advanced Flying School, Kelly Field, Texas. Major G.J. McMurray, the Chaplain of Randolph Field, delivered the invocation and benediction. Colonel A.D. Tuttle, Medical Corps, the Commandant of the School, presided.

Two basic courses, each of four months' duration, are conducted annually, starting July 15th and December 1st of each calendar year. In addition to the resident course, as a year-round activity, the School conducts an extension (correspondence) course in Aviation Medicine, in which there are now 430 nation-wide enrollees. The permanent force on duty at the School now comprises the following-named officers, also nine enlisted men and seven civilian employees:

Colonel Arnold D. Tuttle, M.C., Commandant.

Lieut. Colonel Coleridge L. Beaven, M.C., Assistant Commandant and Director of Extension Courses.

Major Neely C. Mashburn, M.C., Director, Department of Psychology.

Major Charles F. Snell, M.C., Director, Department of Aviation Medicine.

Captain John M. Hargreaves, M.C., Director, Department of Opthalmology.

Captain Walter S. Jensen, M.C., Director, Department of Neuropsychiatry.

Captain Charles L. Leedham, M.C., Assistant Director, Department of Aviation Medicine.

Captain Benj. R. Luscomb, M.A.C., Executive Officer and Secretary.

All of the graduates started the course on December 1st, with the exception of Lieut. Lovelace, of the Medical Reserve, who joined the class on February 15, 1937, completing the six weeks' practical course (after having completed the correspondence course of this School).

The next class is scheduled to begin on July 15th and is expected to have five Naval medical officers in addition to the regular class.

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ASSIGNMENTS FOR C.& G.S. SCHOOL GRADUATES

The following-named Air Corps officers are assigned to the stations indicated upon completion of their present course of instruction at the Command and General Staff School, Fort Leavenworth, Kansas:

To the Philippines: Lieut. Colonel William H. Crom.

To Mitchel Field, N.Y.: Major Emil C. Kiel (Captain).

To Hawaiian Department: Major Oliver P. Gothlin (Captain); Major Bernard J. Tooher (Captain); Captains Robert W. Douglass, Jr., and Homer W. Ferguson.

To Office Chief of the Air Corps, Washington, D.C.: Captain James T. Cumberpatch.

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PROMOTION OF NONCOMMISSIONED OFFICERS

The following-named Air Corps noncommissioned officers were promoted on the dates indicated:

To Master Sergeant, Air Corps:

First Sergeant James S. Grisham, Langley Field, Va., April 1, 1937.

Technical Sergeant Wythe J. Napier, Randolph Field, April 5, 1937.

To Technical Sergeant, Air Corps:

Staff Sergeant John Pryor, March Field, Calif., March 13, 1937.

Staff Sergeant James A. Maginness, Maxwell Field, Ala., April 1, 1937.

Staff Sergeant Ernest Levesque, Hawaiian Department, April 5, 1937.

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ASSIGNMENTS FOR WAR COLLEGE GRADUATES

Under Special Orders of the War Department, recently issued, the following-named Air Corps officers will proceed to the stations indicated upon the completion of their present course of instruction at the Army War College, Washington, D.C.:

To Mitchel Field, N.Y.:

Lieut. Colonel Carl W. Connell (Major)

To Hawaiian Department:

Major Romeyn B. Hough, Jr.

To Berlin, Germany:

Major Arthur W. Vanaman, for duty as Assistant Military Attache and Assistant Military Attache for Air, American Embassy.

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During the months of January and February, 1937, a total of 163 transient airplanes stopped at the Rockwell Air Depot, Coronado, Calif.

ARMY AIR FORCE COMBAT UNITS TO CONCENTRATE IN CALIFORNIA

UNITS of the General Headquarters Air Force will concentrate in California during the period from May 1 to May 31 for the purpose of testing the strength and organization of the flying combat units of the Army. A total of 430 officers, 2,500 enlisted men and 244 Army airplanes will take part in the maneuver. The participating units will be based on March Field at Riverside, Calif., and Hamilton Field at San Rafael, in the same State. Various municipal and commercial flying fields will also be utilized.

The daily missions, as scheduled for the units located on the operating airdromes will be of a type which would be encountered in actual warfare. The average flying time required for each mission will be from three hours for the smaller Pursuit airplane to six hours for the larger Bombardment airplane. These missions will test the efficiency of units involved and will demonstrate the employment of the newer type of Army aircraft. An opportunity will also be given to the civilian population in the vicinity of the operating airdromes to inspect the aircraft now being used by the Army Air Corps.

The units taking part in this concentration and exercise will be under the command of Major General F.M. Andrews, who will be assisted by Colonel H.J. Knerr, Air Corps, as Chief of Staff. General Andrews and members of his staff will fly to the west coast from Langley Field, Va., to take charge of the actual operation of participating units. The Commanding Generals of the two wings participating, which are component parts of the GHQ Air Force, will be Brigadier General D.C. Emmons, 1st Wing, and Brigadier General G.C. Brant, 2nd Wing. The assignment of organizations of the GHQ Air Force to operating airdromes, as announced by the War Department, is as follows:

Headquarters GHQ Air Force, 14 officers - 30 enlisted men from Langley Field, Va., to March Field, Calif.

Headquarters 2nd Wing, 7 officers - 30 enlisted men from Langley Field to Hamilton Field, Calif.

Headquarters 1st Wing, 10 officers - 63 enlisted men, permanent station March Field.

Hq. & Hq. Squadron, 7th Bombardment Group, 43 officers - 244 enlisted men, 18 Bombardment airplanes from Hamilton Field, Calif., to Fresno, Calif.

One Bombardment Squadron, 30 officers - 163 enlisted men, 13 Bombardment airplanes, from March Field to Stockton, Calif.

Two Bombardment Squadrons, 30 officers - 162 enlisted men, 13 Bombardment airplanes from Hamilton Field to Merced, Calif.

3rd Attack Group, Hq. & Hq. Squadron and one Squadron with the 3rd Attack Group, 42 officers - 255 enlisted men, 33 Attack airplanes from Barksdale Field, La. to Bakersfield, Calif.

One Attack Squadron, 30 officers - 177 enlisted men, 28 Attack airplanes from Barksdale Field to Delano, Calif.

One Attack Squadron, 30 officers - 177 enlisted men, 28 A-17 airplanes from March Field to Visalia, Calif.

Hq. & Hq. Squadron, 1st Pursuit Group, and 3 Pursuit Squadrons, 102 officers, 505 enlisted men and 89 Pursuit airplanes from Selfridge Field, Mich., and Barksdale Field to Muroc Lake, Calif.

All personnel of the 1st Pursuit Group stationed at Selfridge Field will be transported by airplane to the operating airdrome at Muroc Lake. Thirteen of the larger Army Transport airplanes will be used for the ferrying of these enlisted men. These transport airplanes will make stops at the following commercial or municipal airports, en route: Muskogee, Okla.; Amarillo, Texas; Winslow, Arizona; Albuquerque, New Mexico.

The week of May 24th to 31st will be devoted to the return of personnel and equipment to the organizations' permanent base. Organizations, upon their return to their home station, will submit reports on the operation of the units taking part in this concentration. These reports will be studied in connection with future exercises of this character.

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NEW STATIONS FOR C.& G.S.SCHOOL GRADUATES

Under Special Orders of the War Department, recently issued, the following-named Air Corps officers are assigned to duty at the stations indicated upon their graduation from the Command and General Staff School, Fort Leavenworth, Kansas:

To Langley Field, Va.: Lieut. Colonels William E. Kepner (Major) and Harold M. McClelland (Major), Major Harold Lee George (Captain), Major Westside T. Larson (Captain), Major Alfred E.Waller (Captain), Captains Charles H. Caldwell, Benjamin W. Chidlaw, William D. Old and Robert B. Williams.

To March Field, Calif.: Major John K. Cannon (Captain), Major Harry A. Halverson (Captain), Captains Carlisle I. Ferris and Ernest S. Moon.

To Bolling Field, D.C.: Captain Alden R. Crawford.

To Brooks Field, Texas: Captain Don W. Mayhue.

(Continued on Page 4).

RESERVE ACTIVITIES ON THE WEST COAST
By the News Letter Correspondent

The month of March at the Headquarters of the Air Corps Detachment at the Municipal Airport, Oakland, Calif., was the high point in our brief career. To begin with, the control depot moved in and annexed three PT-3A airplanes for overhaul and when the cat was let out of the bag our PT's were "never no more to roam" for us.

Next came the grand rush of Air Reserve pilots who are getting "hotter" because the Unit Instructor, Captain Henry, has checked out over twenty-five in the BT-9A's and more ready for check who had received transition in the BT-2B1 and ready to go.

On March 16th, the Commanding General of the 9th Corps Area made his annual inspection. That, with the additional activity in connection with the rush of pilots, had the detachment getting a feverish look in the direction of a furlough blank. Between looking for the inspection group; grabbing the PT's by the wings; the BT-9's by the tails; the BT-2B by the nose and muscling the 0-46A around, a cross-country was booked for the 20th. On that day, 5 PT-3's, 2 BT-9's, 1 BT-2B and the 0-46 headed for Long Beach with a complement of seventeen Reserve pilots tucked away in them. The 0-46 was riding "flight" and all planes landed at their destination on schedule time.

On Sunday, the 21st, all planes started on the return trip. All landed at Bakersfield with the same precision. Alas, they left Bakersfield again with precision - but, from there, the rascal, a heavy driving rain and low ceiling, swooped down on the flight. One lone PT-3 and, of course, the 0-46 and one BT-9 scampered home. Then came the fireworks, and Modesto, Tracy, Vallejo and Livermore telephone girls started to get warmed up. When the curtain was finally dropped, four planes were put to bed in Modesto and two in Livermore. The pilots, all having business to get back to early Monday morning, did their chores and started their trek home by bus, on the thumb and by other means of transportation to check in. Nary a forced landing or a scraped wing.

On the 22nd, the round-up began, a number of Reserve pilots sacrificed their daily wage, reported in for ferry duty, and at 2:00 p.m., all planes were safely parked close to their stalls with the mechanics giving them the twice over.

Still more activity - all planes and the station had a date with the Technical Supervisor on the 23rd. By the grace of the unusual weather, he was a day late, and when he arrived even the planes looked as though they could smoke that famous cigarette and look nonchalant.

About this time the pilots were hotter than ever and the rush was still on. Then came the dawn - we ran out of our allotted flying time, including 75 additional hours, and the end of March saw us with good weather, good and many pilots and good and plenty gloom. Letters, phone calls and radios were then in order.

So ended March. April 1st kept true to tradition; it really did fool us. We thought we had all records for flying safely stowed away for Reserve activities.

Now we are still grooming, and waiting, for RESERVE FLYING TIME.

(Note: Over 2600 hours were flown during the nine months of this fiscal year).

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New Stations for C. & G.S. School Graduates
(Continued from Page 3).

To Wright Field, Dayton, Ohio: Captain Lyman P. Whitten.

To Mitchel Field, N.Y.: Captain Elwood R. Quesada.

To Maxwell Field, Ala.: Lieut. Colonel Edgar P. Sorenson (Major) for duty as a member of the Air Corps Board.

To Fort Riley, Kansas: 1st Lieut. Ford L. Fair.

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RETIREMENT OF TWO KELLY FIELD NONCOMS.

Master Sergeant Aaron J. Sanders, of the 12th Air Base Squadron, Kelly Field, Texas, was retired on March 31st, after 30 years' service. He first entered the service on December 2, 1908, and was assigned to Company "E," 15th Infantry, at Fort Douglas, Utah. He has served in the Hospital Corps, Cavalry, Ordnance Department, and the Air Corps. All of his eight honorable discharges bear the notation - "Character: Excellent." During the World War he was a Sergeant of Cavalry.

Sergeant Sanders will retire to his home at San Antonio, Texas.

Technical Sergeant James H. Eaton, Base Hqrs. and 3rd Air Base Squadron, was retired on March 31st with the rank of 2nd Lieutenant, and will establish his home near San Antonio.

Sergeant Eaton entered the service on January 13, 1909, and has served with the Signal Corps, Cavalry, Field Artillery and the Air Corps since that date. He has ten honorable discharges which bear the notation "Character: Excellent."

Sergeant Eaton served as a commissioned officer in the Field Artillery from August 17, 1918, to April 9, 1919.

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Major John I. Moore, Air Corps, is assigned to duty in Hawaii upon the completion of his present course of instruction at the Army Industrial College, Washington.

BARKSDALE FIELD AND THE LITTLE THEATRE

In the February issue of Readers Digest appears an interesting article on The Little Theatre - the outstanding artistic movement in the United States. Barksdale Field may feel justly proud of its contribution to this important and worthy cultural undertaking, for it has supplied the star performers for practically all productions of The Shreveport Little Theatre during the present season.

The work of Lieut. Noel Parrish as "Dizzy Dean" in Ceiling Zero and "Mio" in Maxwell Anderson's "Winterset" practically assures him of winning the choice as the best actor of the season for The Shreveport Group.

Lieut. "Grassy" Hinton's portrayal of the tough cop in the mob scene in "Winterset" won him an immediate offer of a job on Chief Norwell's Shreveport Police Force.

Lieut. and Mrs. Paul Bunker have done noteworthy work in several plays. Mrs. Bunker's performance as the star in "Personal Appearance" gives her first call as the best actress for the season. Lieut. and Mrs. Livingstone are now in rehearsal for the play next month.

Only those who have actually participated can know the terrific amount of work, energy and time required in rehearsals for these productions, and it is a distinct credit to themselves and the Air Corps that they are willing to make this sacrifice for the cultural development of the community.

Incidentally, the Shreveport Little Theatre stands third among two thousand in the quality of their performance, which gives some idea of the quality of the acting of those mentioned above.

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ACTIVITIES OF 49th BOMBARDMENT SQUADRON

During the past fortnight, the 49th Bombardment Squadron, GHQ Air Force, Langley Field, Va., has participated in two very interesting Group combat exercises featuring ground gunnery from all stations with special emphasis on: Training of gunners to concentrate their fire on small ground targets; bombing at very low altitudes to develop the ability of the bomber to obtain accuracy without the use of the sight; bombing at intermediate and high altitudes; and descent of the Group by flights through an assumed overcast.

Reorganization and training of combat crews has played an important part in Squadron operations. This work, which is in accordance with recently adopted policies of GHQ, has been accelerated to increase the combat efficiency of the organization during the forthcoming maneuvers at Rocky Mount, N.C.

PELICAN ATTACKS ATTACK PLANE

Mr. and Mrs. Pelican flying on high,
Spied a gold-blue streak in the silver sky.
That'll never do! said Mr. Pelican to his shrew,
So with squawk and squeak away he flew -
To meet what? He never knew.
With an awful crash they met in midair -
Feathers and glass flew everywhere.
But Mrs. Pelican only had seen
Her hubby crack up in an A-17.

Perhaps it is not news when some sky birds of the Air Corps practice sharp shooting at pelicans whenever that opportunity arises, but it is certainly NEWS when the case is reversed and the pelican attacks the plane plus pilot. Such was the happening to Lieut. Nelson T. Brown, only recently commissioned from the status of Flying Cadet, and Private, 1st Class, Frank Barnett, his gunner, when they were practicing gunnery off Oceanside, Calif., at noon on March 23rd.

According to Lieut. Brown, the huge bird flew straight through the tri-bladed propeller of the A-17 Northrop Attack plane he was flying, and smashed through the protective windshield, showering the Lieutenant with glass and cutting him severely in face and on his head. The impact also smashed the goggles, and he was surely lucky not to get any splinters into his eyes. As Lieut. Brown put it: "By gad - and I've been extracting broken glass ever since from within my shirt, trousers, blouse and what not."

The attacking bird (or attacked bird), after doing his share of damage, continued towards the tail assembly of the ship and bent the elevators before finally fading out into the distance - lifeless.

Lieut. Brown was temporarily knocked unconscious as a result of the impact. Luckily, Private Brown managed to keep the airplane in the air until his pilot regained his senses. The plane was flown back to March Field.

After the A-17 landed, Lieut. Brown was given medical attention and, although still a bit shaky, seemed to be doing fine 24 hours after the accident.

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Major Muir S. Fairchild and Captain Charles E. Thomas are under orders for duty on the staff and faculty of the Air Corps Tactical School, Maxwell Field, upon graduating from the War College.

SAFETY IN PRIMARY FLYING TRAINING

By the Randolph Field Correspondent

A newspaper article emanating from the Office of the Secretary of War, commending the Air Corps for the improvement in the accident rate during the year 1936, was given considerable publicity. It might be interesting to the Air Corps and, perhaps, improve the enrollment of students to give comparative figures of the accident rates of the service at large and of the Primary Stage of the Air Corps Primary Flying School, Randolph Field, Texas. Heretofore, the instruction period has been considered dangerous, and in many cases well qualified applicants have been deterred from enrollment in the School because their parents or friends have dissuaded them due to the fear of accidents while learning to fly.

As a comparison, the Primary Stage, from October 1, 1931, to March, 1937, inclusive, has given 117,319 hours of flying instruction. During that time there has been one accident, a collision in the air of two planes, causing the death of three. Other than that, no accidents causing even serious injury during student instruction have occurred. This shows an hourly average of 39,106 hours per fatality on the Primary Stage flying, against 12,000 hours per fatality in the service at large or, reducing it to a decimal, one fatality at the rate of .025 per 1,000 hours, or further, there are $3\frac{1}{4}$ times as many accidents in the service at large as have occurred during primary instruction in $5\frac{1}{2}$ years. It should be further noted that this accident rate on the Primary Stage covers a $5\frac{1}{2}$ year average, while the figure of the accident rate in the Air Corps in general is for the best year, namely, 1936.

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A CEREMONY FOR HEROISM

Recently, on what was probably one of the greatest days in the life of Captain John S. Griffith, Air Corps, he was awarded the highest military recognition to active members of the United States Army Air Corps - the Distinguished Flying Cross.

Heroism is an often misused word, but no other term would fit to the gallant deed performed by Captain Griffith and Captain Frank J. Irvin when on a gray, rainy day their experimental Douglas airplane met sudden disaster in the air. The new ship was making a carbon monoxide test flight from Wright Field, Dayton, Ohio, to Indianapolis, Ind. Captains Griffith and Irvin were accompanied by five civilian observers on the trip.

At an altitude of 2,000 feet, the large bi-motored plane suddenly caught fire, and the pilots calmly told the civilians to "jump for it," which they did. Captains Griffith and Irvin then began to combat the spreading flames within the airplane and, cutting spark and gas valves, brought the plane down without any serious damage. Thus they not only saved human lives but government property as well. This incident occurred on July 22, 1936.

It was some six months later that Brigadier General Delos C. Emmons, commander of the First Wing, GHQ Air Force, decorated Captain Griffith for his part in the outstanding event, and since at that time Captain Griffith was stationed with the 30th Bombardment Squadron, the entire personnel of March Field turned out to give honor to a brave officer.

Although Major General Frank M. Andrews, commanding the GHQ Air Force, had originally been assigned to perform the decoration ceremony, General Emmons took over this part, since General Andrews was unavoidably delayed.

Approximately 1,000 civilians from Riverside, Calif., and nearby towns made it a point to visit March Field on that day.

At the present time Captain Griffith is on duty as military representative at the plant of the Northrop Aviation Corporation at Inglewood, Calif.

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KELLY FIELD RUNWAYS NEARING COMPLETION

Construction work on an all-weather runway at Kelly Field, San Antonio, Texas, will be completed by July 1st, according to an announcement by Captain E. V. Dunston, Constructing Quartermaster for San Antonio and vicinity. The miniature range, which is the first permanent building at Kelly Field, will be completed within the next two or three weeks. These two projects total an expenditure of $515,000.

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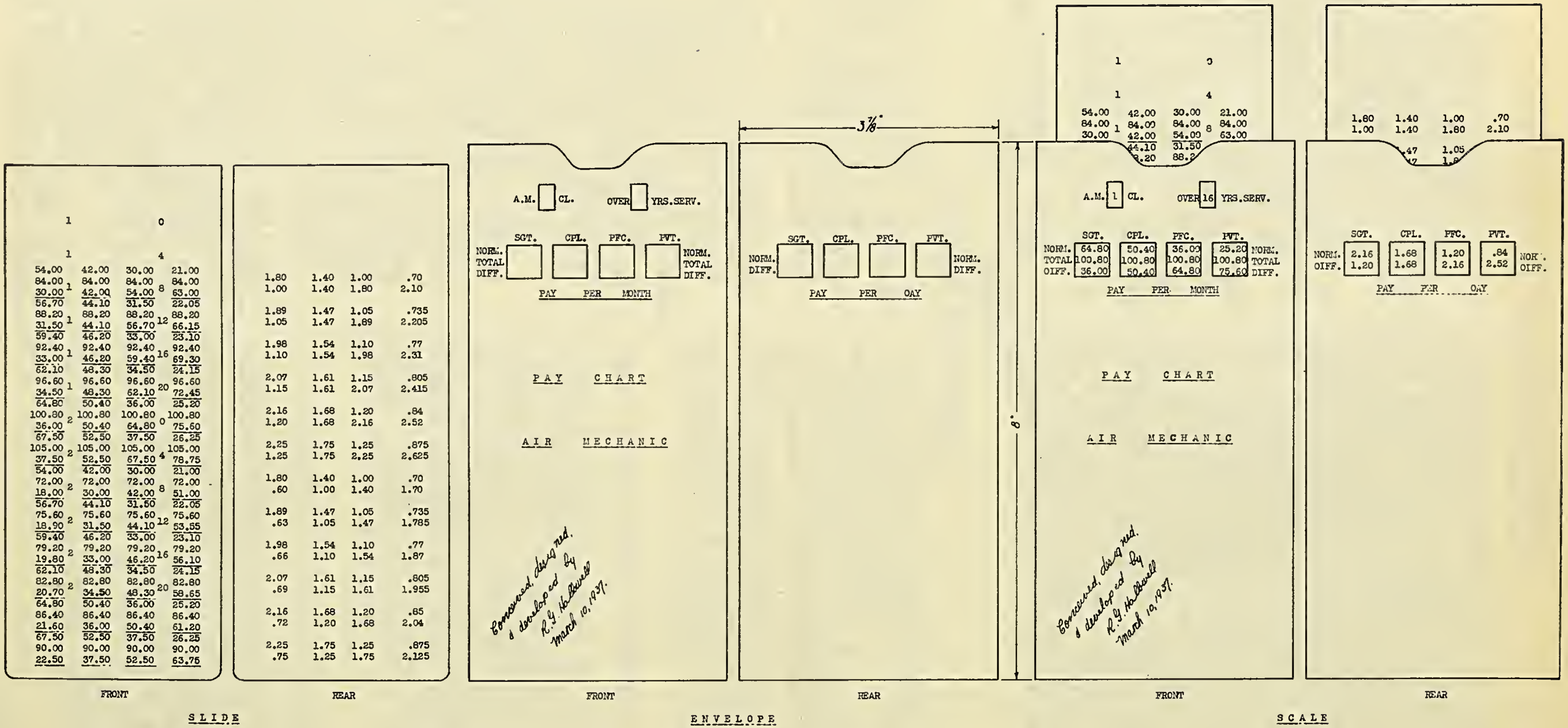
LECTURES ON "FLYING INSTRUCTION"

The officers of Kelly Field were very fortunate in hearing a series of three lectures by Major William C. Morris, Air Corps, who devised a new system of flying training. These lectures were very interesting and, whether or not Major Morris' system is adopted in its entirety, it is probable that all flying instructors will adopt portions of this system and apply it to their own teaching technique.



AIR MECHANIC PAY SCALE

AIR MECHANIC PAY SCALE

On the opposite page are photographic reproductions of an Air Mechanic pay scale, designed and developed by Staff Sergeant Rodney G. Hallowell, Base Headquarters and 1st Air Base Squadron, GHQ Air Force, Langley Field, Va., and which has been used by the Personnel Section of the Base for the past three months in checking reports submitted by the Groups and separate organizations and has been found to decrease the usual time required for checking to one-third.

The scale consists of an envelope and a tabulated chart which is free to slide within the envelope. The envelope is made of two sections of thin cardboard separated by a narrow spacer and glued at sides and bottom, with appropriate cut-outs on front and rear. The slide is made of a section of thin cardboard with tabulated figures printed on both front and rear.

The operation of the scale is practically self-explanatory. By adjusting the slide to show first the Air Mechanic class (1st or 2nd) in conjunction with the number of years' service, figures under appropriate grade show the "Normal" pay (base plus longevity), the "Difference" (pure Air Mechanic pay), and the "Total" pay for a full thirty (30) day month. The tabulations on the face of the chart have been purposely arranged in sequence - Normal, Total, Difference - to facilitate checking the Report of Air Mechanics' Pay, W.D. Form #134, rendered each month to the Chief of the Air Corps. The reverse side of scale shows the "Normal" pay (base plus longevity) per day, and the "Difference" (pure Air Mechanic Pay) per day. These figures, multiplied separately by the number of days for which pay is to be computed, and then added to arrive at the total, furnishes a means of quickly figuring pay when only part of a month is to be considered due to dis-rating, re-rating, promotion or reduction in grade, change in pay period, discharge, etc.

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ACTIVITIES OF 96TH BOMBARDMENT SQUADRON

At present the 96th Bombardment Squadron, Langley Field, Va., has one Y1B-17 Bomber, and expects the remaining three to be delivered from Seattle within the next few months. With one flight of B-17's and one flight of B-10B's, the Squadron looks forward to carrying out a diversified and highly interesting training program. Routine training within the Squadron during the past few weeks has consisted chiefly of training of the individual combat crew members in order to qualify each man for his particular assignment. Upon termination of this phase when the combat crews are individually trained, our work will progress to the training of the combat crew as a group to bring about that degree of teamwork between combat crew members which is so absolutely essential to successful operation.

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CONSIDERABLE FLYING BY 20TH SQUADRON

More flying training has been accomplished in the 20th Bombardment Squadron over the last fortnight than in any two weeks so far this year. Special emphasis has been placed on fitting each member of the combat crews to fill his particular job. Lieut. Bockman's radio department has furnished the Squadron with five new radio operators, and they fill a long felt need. All pilots either qualified or were tested in Instrument Flying, under the provisions of Air Corps Circulars No. 50-1 and 50-1B. As a unit of the Second Bombardment Group, Langley Field, Va., the 20th Squadron participated in several combination navigation, formation and bombing missions, two of which were over-water flights.

Six different flight problems of a unit combat nature, involving navigation, formation and actual or simulated bombing were devised and the missions executed. Tests were made of the new .50 caliber machine guns.

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ROCKWELL AIR DEPOT HAS MANY VISITORS

During the month of March, 88 transient airplanes stopped at the Rockwell Air Depot, Coronado, Calif. Among the visitors were Brigadier General Henry H. Arnold, Assistant Chief of the Air Corps, and Colonel S.W. FitzGerald, who arrived in A-17's on March 8th and left on the 10th. General Arnold and Colonel FitzGerald conferred with the Commanding Officer of the Rockwell Air Depot regarding Engineering and Supply matters, particularly with reference to the new types of airplanes now being purchased by the Air Corps.

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AIR RESERVE PILOT HANDY WITH THE BRUSH

The return of Lieut. Ashby Toulmin to active duty brings back to Barksdale Field, La., the best artist with brush and easel in the Air Corps. He has recently been studying under Boardman Robinson at the Colorado Springs Fine Arts Center, and under Thomas Hart Benton at the Kansas City Art Institute.

Lieut. Toulmin's painting of the 3rd Wing Insignia will soon be hung in the Officers' Club. All who have seen it acclaim it. His room is a gallery of beautiful landscapes and portraits by his own hand.

A POPULAR PORT OF CALL

BARKSDALE Field, Shreveport, La., has become the aerial cross roads of the South, not only for Army aviators, but those of the Navy and Marine Corps as well. This field affords all the necessary facilities to make it a desirable port of call for all military aerial traffic passing anywhere in the vicinity.

Captain Leon Johnson, Base Operations Officer, has his visiting ship crew geared to handle efficiently any number of airplanes, from a "lone eagle" to an entire Wing or more. Refueling, housing, inspection, maintenance work, spare parts, etc., are only a part of his stock in trade, for he also manages to hand out more than his share of fair weather and tail winds to all who come this way.

The Post Exchange, or the Officers' Mess, are always prepared to feed any hungry wayfarer, and those two genial hosts, Lieuts. Hinton and Sangster, operate a very home-like visiting officers' quarters.

If the visitor is looking for city life, Shreveport is only four miles away, with ample transportation facilities.

Because of its strategic location on a direct East-West southern transcontinental route between California and the South East Atlantic coast, Barksdale Field affords a desirable refueling stop for all year 'round transcontinental traffic. Because of its location, midway between the East and West Coasts, it makes a convenient overnight stopping place for those who wish to split the transcontinental journey into two days. For large planes, like the Douglas or Boeing four-motored Bombers, which make the transcontinental hop with only one stop, Barksdale Field, with its large, solid landing field, refueling facilities and weather service, midway between the East and West coasts, proves a logical place to stop.

Only recently, Major Barney Giles and Major Caleb V. Haynes, Air Corps, stopped here with the first two four-motored Boeing Bombers enroute from Seattle, Wash., to their station at Langley Field. A short time ago, Major Charles Chauncey made his one stop here in a Douglas Bomber, enroute from Langley Field to March Field, Calif. On March 9th, one half of the entire Marine Air Corps, consisting of some fifty-three airplanes, stopped here enroute from the West Coast to their base at Quantico, Va. They had previously stopped here on their way to the Naval maneuvers in January. On both occasions they were taken care of in record time, without a hitch, by Captain Johnson's visiting ship crew.

There is also a constant stream of Naval planes from San Diego, Pensacola, Norfolk and Anacostia passing through Barksdale Field, and there hardly passes a day without some traffic to that great Army aviation center, San Antonio, not to mention National Guard and Reserve planes from Houston, Dallas and Little Rock. In fact, Barksdale Field can lay a reasonable claim to the record for handling more military visiting ship traffic than any other airport in the world.

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SPEEDY PHOTOGRAPHIC WORK

An example of the speed with which an Air Corps Photo Section can attack and complete an extensive project was given on March 21st, 22nd and 23rd.

Duncan Field received a radio from the Chief of the Air Corps at noon Sunday, March 21st, requesting a series of photographs showing the exterior and interior of a modern Air Repair Depot, these photos to be sent by air mail. The order was transmitted to the Commanding Officer of the 22nd Photo Section, Kelly Field, Sunday afternoon.

The files of the Photo Section were searched that afternoon, and 39 views found that were suitable for reproduction. Six prints were made of each view by 10:00 o'clock that night. At eight o'clock Monday morning, work was begun photographing various phases of the Depot. Thirty-six new exposures were made. These were developed Monday night and printed Tuesday morning. By two o'clock Tuesday, less than 48 hours after the project was begun, 450 prints were delivered to the Commanding Officer of Duncan Field for transmittal to the Chief of the Air Corps.

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NAVIGATION TRAINING IN 21ST SQUADRON

Within the past few weeks, many new enlisted men were assigned to the 21st Reconnaissance Squadron at Langley Field, Va. These men are, with a few exceptions, inexperienced in any phase of squadron work. The Squadron has, therefore, been busily engaged during the past few weeks with the training of these new men with the view of assigning each man to that particular work for which he is best adapted.

At present the following officers are undergoing training in the Navigation School conducted by this Squadron: Lieuts. E.P. Mussett, R.E. Koon, C.H. Rees and Wm. A. Matheny.

Captain A.Y. Smith, Officer in Charge of this Navigation School, recently received an able assistant in Lieut. J.W. Egan, who came from Luke Field, T.H. Lieut. Egan is attached to the 49th Bombardment Squadron for tactical training. With both of the OA-4A's undergo-

(Continued on Page 9).

2ND BOMBARDMENT GROUP A BUSY OUTFIT

The Second Bombardment Group, Langley Field, Va., has of late been engaged in a high-gear series of activities of maximum interest to its personnel and of considerable importance to the entire Air Corps. The first Y1B-17 arrived on March 1st, followed rather closely by the second article on March 12th. Majors Giles and Haynes brought the two big Bombers through from Seattle without incident. To date the necessary flight-checking of subsequent combat crews has been given first priority and, as an indication of the schedule being followed, the flight logs of the two airplanes reveal that, up to April 3rd, there were flown in the two preceding weeks 141 hours and 50 minutes, to include 8½ hours at night; .30 and .50 caliber gunnery from all stations; bombing from 5,000 to 8,000 feet; aerial photography to spot bomb hits; performance flights on one, two, three and four engines; landings at March, Barksdale, Maxwell, Pope, Langley, New Bolling, Old Bolling, Phillips and Mitchel Fields, and familiarization flights and landings to complete the piloting qualifications for Lieut. Colonel Robert Olds, Captains E.R. McReynolds and C.W. Cousland, and 1st Lieut. W.W. Higgins.

Majors Giles and Haynes were previously checked off by Major Corkille at March Field, and Major Meloy has been released by Major Giles on the third Bomber for the Group, which is now at March Field enroute to Langley Field.

Enthusiasm within the 2nd Bombardment Group for the new four-engined Bomber is uniformly high. Pilots cannot find enough praise for its handling qualities and performance. Tremendous progress in the tactical capabilities of this Group appear definitely assured. Although the Y1B-17 Form #1 resembles a hotel register when all members of the crew and extra passengers are listed, and the pilot, co-pilot, chief mechanic check list recalls coonskin coats at an autumn football game through or around which we try to see the home team come out of its huddle, we have a real combat airplane on which precision team work before, during and after flights constitute the criteria of successful operations.

In addition to the special Y1B-17 ferrying project, the Group is attempting to maintain a temporary combat strength of one B-10B flight per squadron. This will be continued until at least two Y1B-17's are assigned each squadron, at which time the combat strength of the Group will be shifted completely from the B-10B's to the Y1B-17's.

During the latter part of March, two missions were scheduled and completed successfully in connection with routine off-shore joint training. Interceptions up to a hundred miles east of Langley Field were made with absolute accuracy by both the reconnaissance teams from the 21st Reconnaissance Squadron and by the 96th Bombardment Squadron. The 96th Squadron was reinforced in these missions by flights from the 49th and 20th Bombardment Squadrons.

Projected operations included a national broadcast from a Y1B-17 over Washington, D.C., on April 4th; an aerial review, led by another Y1B-17, in the New York area on April 6th, and preparation for two weeks of Second Wing Exercises, during which period the Group, less the Y1B-17 echelon, will operate from an auxiliary airdrome at Rocky Mount, N.C.

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Navigation Training in 21st Squadron

(Continued from Page 8).

ing overhaul at the Middletown Air Depot, the work of the Navigation School has been carried on with B-10B's. This has hampered operations somewhat because of the limited radius which the B-10B can individually operate over water.

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ADVANCED STUDENTS ON NAVIGATION FLIGHT

Twenty-two students of the Pursuit Section of the Advanced Flying School, Kelly Field, Texas, took off on April 1st on an individual navigation flight to Mission and Fort Ringgold, Texas.

The students were checked in at Mission by 1st Lieut. R.J. Browne, and at Fort Ringgold by 1st Lieut. B.M. Hovey, Jr. When about 20 miles north of Fort Ringgold, the P-12 airplane piloted by Flying Cadet Jesus A. Villamore began to vibrate. Cadet Villamore made a forced landing and discovered that No. 1 cylinder had become loosened. He showed both courage and skill in landing his plane. Another student noticed this airplane on the ground and returned to Fort Ringgold to make a report to the instructor. The airplane could not be flown back to Kelly Field. No other mishaps were reported.

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APPOINTMENTS

Effective April 1, 1937, Colonel Frederick L. Martin (Lieut. Colonel) was appointed Wing Commander, with the temporary rank of Brigadier General in the Air Corps, with rank from January 1,1937, and assigned to duty as Wing Commander of the 3rd Wing, GHQ Air Force, Barksdale Field, Shreveport, La.

Lieut. Colonel Millard F. Harmon was promoted to the temporary rank of Colonel, with rank from April 1, 1937. Colonel Harmon is now stationed in the Hawaiian Department and is in command of Luke Field.

Biographies

LIEUT. COLONEL RALPH P. COUSINS

Lieut. Colonel Ralph P. Cousins, Air Corps, now on duty as a student at the Army War College, was born at Mexia, Texas, December 1, 1891. After graduating from West Texas Normal College in 1911, he was appointed to the United States Military Academy, from which he graduated, June 14, 1915. Commissioned on that date as a second lieutenant, he was assigned to the 12th Cavalry, and served with his regiment in the Brownsville District, State of Texas, on border patrol from September 14, 1915, to February 7, 1916, participating in action against Mexican bandits, September 17-18, 1915. On February 7, 1916, he was transferred to the 6th Cavalry, and he served therewith on border patrol duty, with the Punitive Expedition into Mexico, and in the Big Bend, Texas, District to August 7, 1916.

Detailed to the Aviation Section, Signal Corps, Colonel Cousins reported, in August, 1916, for flying training at the Signal Corps Aviation School at San Diego, Calif., and upon his graduation therefrom in April, 1917, he served for a brief period as a pilot with the 1st Aero Squadron at Columbus, New Mexico.

Assigned May 15, 1917, to the University of Texas, Austin, Texas, he organized the School of Military Aeronautics at that institution and was commandant thereof until September 25, 1917, when he was transferred to the Office of the Chief Signal Officer, Washington, D.C., where he served for brief periods, first as Assistant Director of Schools and then as Executive Officer for the Chief of Personnel and as Aviation Representative on the General Staff at the Army War College. In February, 1918, he was ordered on temporary duty overseas with the A.E.F., and he served as liaison officer in connection with flying training schools in England and France, and was at the front for a short time.

Colonel Cousins returned to the United States during the latter part of May, 1918, and was assigned to duty in the Division of Military Aeronautics, Washington, D.C., as a member of the Control Board. In October, 1918, he assumed command of Group B, 1st Provisional Group, and of Roosevelt Field, Mineola, L.I., New York. On January 15, 1919, he assumed command of Payne Field, West Point, Miss. Towards the latter part of 1919, Colonel Cousins assumed command of the 1st Day Bombardment Group at Kelly Field, Texas, and he remained on this duty until March 9, 1920, when he assumed command of Post Field, Fort Sill, Okla., for a month, and then returned to his previous duties at Kelly Field.

Transferred to the Office of the Chief of Air Service, Washington, D.C., in September, 1920, he served as a member of the Advisory Board until August of the following year, when he was ordered for duty as a student at the Sheffield Scientific School, Yale University, where for a period of one year he pursued a course in communications, graduating with the degree of Master of Science. For several months thereafter he was on temporary duty in the laboratories of the General Electric Company at Schenectady, New York, and then for a short time at the Signal Corps Communications School at Camp Alfred Vail, N.J.

From January to September, 1923, Col. Cousins was on duty in the Training and War Plans Division, and he was then assigned as Assistant Commandant of the Air Service Technical School at Chanute Field, Rantoul, Ill. On December 28, 1923, he assumed command of Chanute Field, at the same time serving as Acting Commandant of the Air Service Technical School, to July, 1924, when he resumed his former duty as Assistant Commandant, in addition to duty as Executive Officer of the post. In October, 1924, he was appointed Post Adjutant and Personnel Adjutant.

Colonel Cousins returned to duty in the Training and War Plans Division, Office of the Chief of Air Service, on January 2, 1925. More than three years later, he was transferred to the Philippines, and he assumed command of Clark Field, Pampanga, P.I., July 8, 1928. Completing his two-year tour of foreign service, he was transferred to Langley Field, Va., for duty as a student at the Air Corps Tactical School. Following his graduation from the one-year course of instruction at this school, he was assigned as student at the Command and General Staff School, Fort Leavenworth, Kansas, where he completed a two-year course in June, 1933, following which he was assigned to duty in Washington in the Office of the Chief of the National Guard Bureau.

On August 20, 1936, Colonel Cousins was assigned to his present duty as a student at the Army War College.

During the World War, Colonel Cousins held the temporary rank of Major from August 9, 1918, to February 27, 1920. He received his regular promotion to 1st Lieutenant, July 1, 1916; to Captain, July 25, 1917; to Major, June 21, 1925; and to Lieutenant Colonel, December 22, 1936. Prior to his permanent promotion to this latter rank, he held the temporary rank of Lieut. Colonel from June 16, 1936. He holds the ratings of Airplane Pilot and Airplane Observer.

LIEUT. COLONEL LEO A. WALTON

Lieut. Colonel Leo A. Walton, Air Corps, now on duty as Executive Officer of the 1st Wing, GHQ Air Force, March Field, Calif., was born at Salem, Oregon, October 8, 1890. After graduating from grammar and high school of his native city, he received an appointment to the United States Military Academy, graduating therefrom in June, 1915, and being commissioned a second lieutenant and assigned to the 10th Cavalry.

Following service with his troop at Fort Huachuca, Arizona, September 15, 1915, to March 1, 1916; at Naco, Arizona, to March 12, 1916, and with the Punitive Expedition into Mexico to December 15, 1916, he was detailed to the Aviation Section, Signal Corps, and assigned as a student at the Signal Corps Aviation School at San Diego, Calif., where he was stationed until August 4, 1917. He received the rating of Junior Military Aviator, July 26, 1917.

Transferred to Kelly Field, Texas, Col. Walton commanded the 76th Aero Construction Squadron from August 16th to October 23rd, and thereafter exercised supervision over the 75th, 76th, 77th and 78th Aero Squadrons until November 11, 1917, when he was transferred to Call Field, Wichita Falls, Texas, as Assistant to the Officer in Charge of Flying. From January 1 to March 5, 1918, he was Commandant of Cadets at Call Field and thereafter Officer in Charge of Flying until March 19th. He was then transferred to Brooks Field, San Antonio, Texas, as Officer in Charge of Flying. On October 10, 1918, he assumed command of Brooks Field.

From November 22, 1918, to March 2, 1919, Colonel Walton was on duty with the District Supervisor of the Southern District at El Paso, Texas. He was Assistant to the Officer in Charge of Flying at Kelly Field, Texas, to March 31, 1919; Acting Officer in Charge of Flying to May 15, 1919; and Commanding Officer of the Flying Department to June 25, 1919. Returning to Fort Bliss, El Paso, he commanded a detachment of the 1st Bombardment Group to November 18, 1919; and the First Surveillance Group to November 8, 1920.

On November 15, 1920, Colonel Walton took up his duties as a student at the Field Officers School at Langley Field, Va. In May, 1921, he assumed the additional duty of Commanding Officer of the 1st Provisional Bombing Group. Upon graduating from the Field Officers School on August 19, 1921, he was transferred to the Office of the Chief of Air Service, Washington, D.C., and assigned to duty in the Training and Operations Group, which was later redesignated as the Training and War Plans Division.

On August 23, 1923, Colonel Walton began duty as a student at the Air Service Engineering School at McCook Field, Dayton, Ohio, and, following his graduation on August 15, 1924, he remained at McCook Field as Assistant to the Chief of the Engineering Division in addition to performing vatious other duties, until the latter part of August, 1925, when he was transferred to the Philippines. From December 16, 1925, to February 25, 1926, he commanded Kindley Field and the 2nd Observation Squadron. He was then assigned to Nichols Field, P.I., with the Headquarters of the 4th Composite Group. Granted an extended leave of absence, under exceptional circumstances, he returned to the United States in March, 1926, and until August 3, 1926, he was on temporary duty with the Organized Reserves of the 8th Corps Area with station at Denver, Colo. He returned to the Philippines on September 22, 1926, and assumed command of the 3rd Pursuit Squadron and Clark Field. In May, 1928, he was transferred to Nichols Field for duty as Executive Officer of the post and of the 4th Composite Group.

Colonel Walton's next duty assignment was at March Field, Riverside, Calif., where he has been stationed up to this writing. His initial assignment was with the Headquarters of the 13th School Group. In October, 1928, the additional duties of Director of Training and Assistant Commandant of the Air Corps Primary Flying School were assigned to him. At various times he was in temporary command of the post. On October 1, 1931, he was transferred to the 1st Bombardment Wing and appointed Post Executive Officer in addition to his other duties. On November 14, 1932, he was assigned to the Headquarters of the 7th Bombardment Group as Executive Officer. At various times he temporarily commanded this organization. For a time he was on duty with the Civilian Conservation Corps, then as Commanding Officer of the Station Complement. Since August 17, 1936, he has been on duty as Executive Officer of the 1st Wing, GHQ Air Force.

Colonel Walton held the temporary rank of Major of Field Artillery, National Army, July 5, 1918, to February 27, 1920. He was promoted to 1st Lieutenant, July 1, 1916; to Captain, May 15, 1917; to Major, June 18, 1925; and to Lieutenant Colonel, December 18, 1936. He held the temporary rank of Lieutenant Colonel from June 16, 1936, until the date of his permanent appointment to that rank. He holds the flying ratings of Airplane Pilot and Airplane Observer.

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Lieut. Colonel Ralph H. Wooten (Major), now on duty as a student at the Army War College, Washington, D.C., has been detailed as a member of the War Department General Staff, and will take up his new duties upon his graduation.

ELIMINATION OF BOMBARDMENT SECTION AT THE ADVANCED FLYING SCHOOL

Touching on the elimination of the Bombardment Section at the Air Corps Advanced Flying School, Kelly Field, Texas, THE TEE, published by the Flying Cadet Battalion at the Air Corps Training Center, states that this came as a logical step in order to adjust training methods to the changes in military tactical flying which have arisen as a result of the development of new Bombardment airplanes. Broadly speaking, this adjustment in the advanced training program was found advisable for two distinct reasons.

First, it had become definitely established in tactical units that in order to promote efficient and safe operation of the large, new dual motored Bombardment airplanes the pilot must have more flying experience than that provided in one year's training at the Air Corps Training Center. To meet this situation two courses lay open for consideration. The first alternative was that the Bombardment Section at Kelly Field would be retained and those successfully completing the course would be allocated to other branches of the Air Corps on tactical duty for further seasoning before they were sent back to the Bombardment branch as a full-fledged, competent pilots. The defects in this course of training are practically obvious. The student completing training here in the Bombardment Section and sent out, say to an Attack squadron, would be poorly prepared to take his place in such an organization.

The second alternative, and the one found most practicable, was to eliminate a Bombardment Section, as such, at Kelly Field and give all advanced students more flying time in the Bombardment airplanes in conjunction with the regular flight training of their particular section. This system has a two-fold advantage. It will permit all graduates to join tactical units especially trained in a particular branch; at the same time, all graduates will have more bi-motor time than formerly and they will have the background training to be readily absorbed into a Bombardment unit after flying hours and experience are built up in another branch of the Air Corps.

In addition to the advantages of such a system pointed out above, there is still another. Present indications are that multi-motor airplanes will be used more and more in future military aviation. Any training in bi-motor airplanes which the graduate possesses will be a distinct advantage when he is called upon to fly one of these new ships.

Under the new plan, all students at Kelly Field will get approximately 30 hours flying time in the B-6's. Before the inauguration of the new plan, students from sections other than Bombardment usually only received approximately five hours transition in the Keystones. The 30 hours of training will include day and night navigation and all other phases of Bombardment training.

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WAR DEPARTMENT ORDERS

Changes of Station

To Panama Canal Department: Captain Howard H. Couch, from Advanced Flying School, Kelly Field, Texas; 1st Lieut. Thomas L. Bryan, Jr., from assignment and duty as student at Air Corps Technical School, Chanute Field, Ill.; Major Peter E. Skanse (Captain) from Maxwell Field, Ala.

To the Philippines: Captain Charles Backes, upon completion of present course of instruction at Air Corps Tactical School, Maxwell Field, Ala.

To Chanute Field, Ill.: 2nd Lieut. Burton W. Armstrong, Jr., from Langley Field, Va., for duty as student at the Air Corps Technical School; 1st Lieut. Thomas R. Starratt, from Hawaiian Department, for duty as student in the Photographic course, Air Corps Technical School; 2nd Lieut. Henry B. Fisher from Selfridge Field; Captain George H. Steel from Kelly Field.

To San Francisco, Calif.: 2nd Lieut. John A. Hilger, from March Field, to Letterman General Hospital for observation and treatment.

Transfer

1st Lieut. Robert M. Lee transferred to the Cavalry, March 20, 1937, with rank from August 1, 1935, and to duty with the 1st Cavalry at Fort Knox, Ky.

Orders Revoked

Assignment of Captain Clinton W. Davies, student at Air Corps Tactical School, Maxwell Field, Ala., as student in the 1937-1938 course at the Command and General Staff School, Fort Leavenworth, Kansas.

Assignment of 2nd Lieut. Russell L. Waldron, from Langley Field, to Chanute Field, Ill., for duty as student in the Airplane Maintenance Engineering Course, Air Corps Technical School.

Assignment of 2nd Lieut. Eugene Brecht, Jr., Selfridge Field, Mich., to Chanute Field for duty as student in the Armament course at the Air Corps Technical School.

Assignment of 1st Lieut. David R. Gibbs, Langley Field, to Chanute Field for duty as student in the Maintenance Engineering course at the Air Corps Technical School.

Assignment of 1st Lieut. Douglas T. Mitchel from Barksdale Field, La., to Panama Canal Department.

Orders Amended

Lieut. Colonel Donald P. Muse (Major) assigned to Barksdale Field, La., instead of Mitchel Field, N.Y., upon the completion of his present tour of foreign service.

Obituaries

While towing a target on April 7th during aerial gunnery practice at Fort Crockett, Galveston, Texas, the airplane piloted by 1st Lieut. Arthur E. Livingston, Air Reserve, dived into the water approximately 3½ miles off shore. At this writing neither the body of the pilot nor the wrecked airplane was recovered. The deceased officer was a member of the 55th Pursuit Squadron, stationed at Barksdale Field, La.

Lieut. Livingston was born at Russellville, Arkansas, February 2, 1909. After graduating from high school, he attended Hendrix College for three years, and the University of Southern California for one year. He served with the National Guard for one year.

Appointed a Flying Cadet, Lieut. Livingston graduated from the Primary Flying School at March Field, Calif., February 20, 1931, and from the Advanced Flying School, Kelly Field, Texas, June 26, 1931, on which date he was commissioned a 2nd Lieutenant in the Air Reserve and rated an "Airplane Pilot."

Assigned to extended active duty, Lieut. Livingston served with the 12th Observation Squadron at Dodd Field, Fort Sam Houston, Texas, from July 1 to July 22, 1931; with the 95th Pursuit Squadron at Rockwell Field, Calif., from July 26 to October 23, 1931, and at March Field with the 95th Pursuit Squadron to August 31, 1932, when he reverted to inactive status.

For three years thereafter, Lieut. Livingston was city editor of the Russellville, Ark., COURIER DEMOCRAT. On September 1, 1935, he was placed on active duty with the Civilian Conservation Corps, and on November 15 1935, he was placed on extended active duty with the 55th Pursuit Squadron at Barksdale Field, La.

Lieut. Livingston accumulated a total flying time of approximately 1200 hours. He was promoted to 1st Lieutenant, Air Reserve, on August 10, 1935.

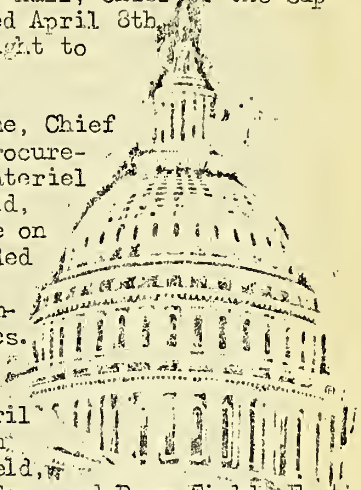
The bodies of Lieut. Robert C. Love, Air Reserve, and Private Emory J. Parsons, who crashed into a tree high up on Mt. McKinley of the San Bernardino mountain range during a storm on the night of March 27th were recovered two days later. The wrecked airplane was sighted by a pilot of one of 20 airplanes of the 17th Attack Group, March Field, sent out to search for the missing men.

Lieut. Love was born at Hickory, N.C., February 10, 1911. He graduated from Hickory grammar school in 1924; from Galileo High School in 1929, and from the University of Southern California, with the degree of Bachelor of Arts, in June, 1934.

Qualifying for appointment as a Flying Cadet, he entered the Primary Flying School, Randolph Field, Texas, with the October, 1934, Class. After satisfactorily completing the course at Randolph Field, he was transferred to the

(Continued on Page 14)

WASHINGTON OFFICE NOTES



Colonel Chalmers G. Hall, Chief of the Supply Division, returned April 8th from a navigation flight to Hartford, Conn.

Major Carl F. Greene, Chief of the Engineering Procurement Branch of the Materiel Division, Wright Field, dropped in the office on April 6th. He attended a meeting of the National Advisory Committee for Aeronautics.

Major Alfred W. Marriner returned April 7th from a navigation flight to Maxwell Field, Ala., Fort Benning, Ga., and Pope Field, Fort Bragg, N.C. On April 13th he delivered a lecture at the Signal School at Fort Monmouth, N.J.

Major Albert W. Stevens and Captain Charles A. Bassett, from wright Field, were in the office on April 8th for a conference. Major Stevens recently assumed charge of the Army Aeronautical Museum.

Major Lowell H. Smith, Chief of the Inspection Division, left March 28th on an inspection trip.

Visitors to the Chief's office during the course of leaves of absence were Major Paul J. Mathis from Langley Field, and Major Claude E. Duncan from Mitchel Field.

Major George L. Usher, Chief of the Personnel Division, returned April 1st from a navigation flight to Maxwell Field, Ala.

Lieut. Colonel Vincent B. Dixon and Major Charles Y. Banfill recently returned from leaves of absence.

Lieut. Colonel Gerald E. Brower and Major Norman D. Brophy returned from Wright Field.

Visitors who dropped in the office during the course of navigation flights were Lieut. Colonel Harvey S. Burwell from Langley Field; Lieut. Colonel William B. Wright, Jr., from Fort Hayes, Ohio; Major Harry A. Halverson from the Command and General Staff School, Fort Leavenworth, Kansas.

Major Edward V. Harbeck, Jr., of the Inspection Division, left April 6th for Randolph Field.

Major Robert Kauch returned April 8th after ferrying a plane from the West Coast to Wright Field.

Captain Mervin E. Gross left April 11th for Wright Field for a conference.

Captain James B. Jordan left for Chicago on April 12th.

Obituaries

Continued from Page 13

Advanced Flying School, Kelly Field, Texas, from which he graduated October 12, 1935, specializing in Attack Aviation. He was rated an "Airplane Pilot," effective on that date.

Assigned to extended active duty, under his status as Flying Cadet, at Barksdale Field, Shreveport, La., with the 90th Attack Squadron, Lieut. Love was on duty as Assistant Armament Officer and Assistant Communications Officer. He was appointed a second lieutenant, Air Reserve, October 14, 1936, and transferred to March Field, Calif., in March, 1936, for duty with the 73rd Attack Squadron as Assistant Armament Officer.

Private Parsons, a native of Texas, enlisted in Long Beach, Calif., in the Army Air Corps, in November, 1936. He was a member of the 73rd Squadron of the 17th Attack Group.

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PERSONNEL ORDERS

Upon the completion of their present course of instruction at the Army War College, Fort Humphreys, D.C., Lieut. Colonel Ralph P. Cousins is under orders to proceed to Langley Field, Va., for duty on the staff of the Commanding General of the GHQ Air Force, while Lieut. Colonel Willis H. Hale (Major) is assigned to duty in the Panama Canal Department, sailing from New York City on or about September 11, 1937.

First Lieut. William D. Eckert, recently returned from foreign service, is relieved from assignment to station at Mitchel Field, New York, and assigned to station at Randolph Field, Texas, reporting to the Commanding General of the Air Corps Training Center for duty upon the expiration of his present leave of absence.

Lieut. Colonel Robert C. Candee (Major), is relieved from his present assignment and duty at the Naval War College, Newport, R.I., and will proceed to New York, N.Y., and sail on the transport scheduled to leave that port on or about May 19, 1937, for San Francisco, Calif. From that city, upon the expiration of such leave of absence as may be granted him, he will sail on the transport scheduled to leave that port on or about August 28, 1937, for the Hawaiian Department, where he will report to the Commanding General for assignment to duty with the Air Corps.

Second Lieut. Thomas Bellamy Mixon, Air Reserve, is ordered to active duty at Langley Field, Va., for a period of three years from April 21, 1937. He hails from Phoebus, Va.

Upon the completion of his present course of instruction at the Command and General Staff School, Fort Leavenworth, Kansas, Major Dale V. Gaffney (Captain) will proceed to Hamilton Field, Calif., for duty.

ELIMINATING COLD FEET

The Materiel Division, Wright Field, Ohio, is engaged in the project of standardizing the Type A-6 winter flying shoes. This shoe is constructed in the form of an overshoe with a light slipper insert.

The overshoe and insert are fabricated with 3/4-inch and 3/8-inch sheep shearling, respectively. The overshoe contains a 3-inch wide rubber foxing to which is attached a durable compounded rubber sole and heel. A heavy non-skid bar tread is also provided on the sole. Fastening means for the overshoe is provided by an interlocking fastener attached to the front opening, also a 1½-inch buckle and strap encircling the top edge of the upper. The slipper insert is provided with a felt sole and heel as a means of providing support for the feet when worn for walking purposes and to provide better operation of the airplane rudder and foot controls. An ankle strap is also provided on the inserts to prevent them from sticking in the overshoe when withdrawing the feet. The type A-6 winter shoes can be worn with or without the inserts, depending on the amount of warmth required by the wearer. Maximum warmth is obtained by removal of the wearer's regular shoe and using the insert with the overshoe.

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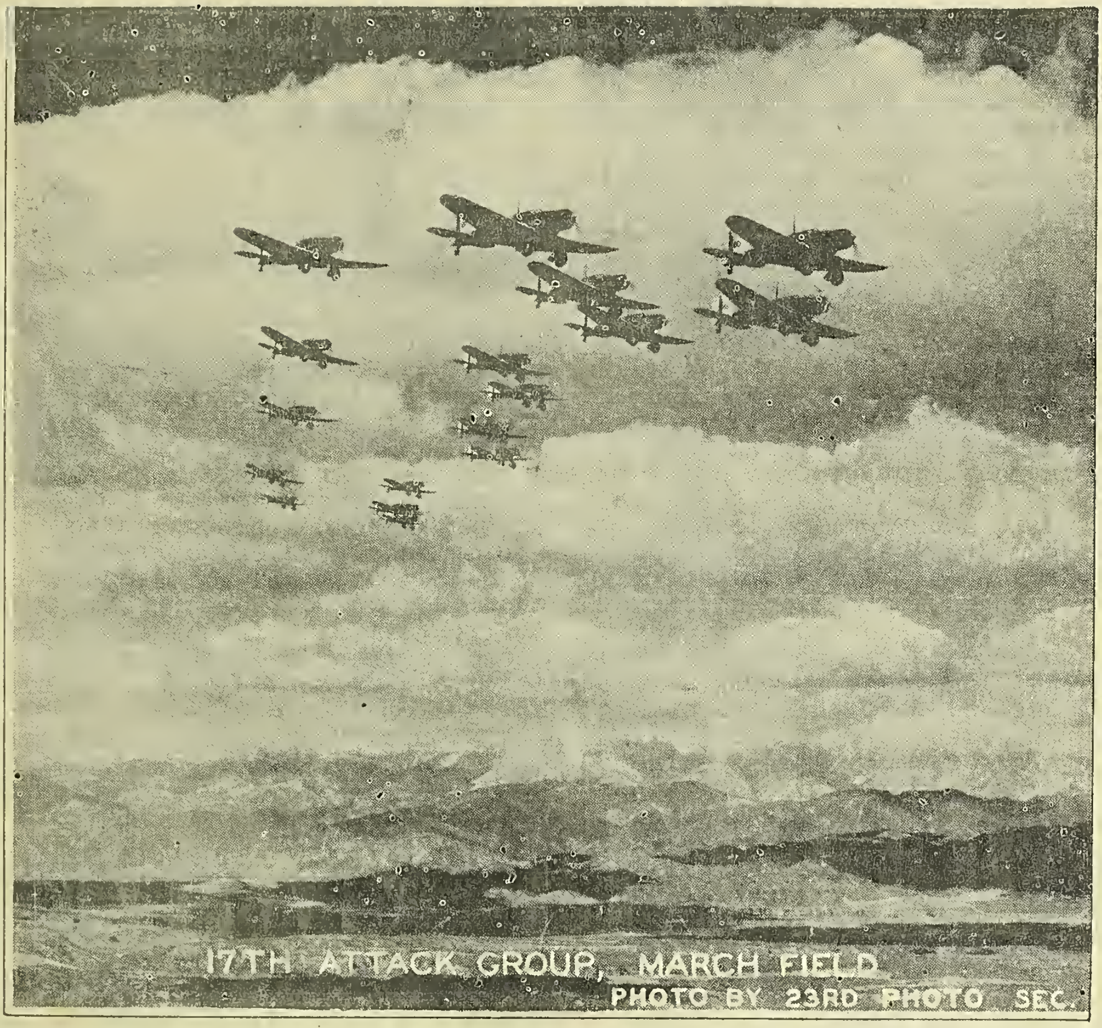
SCARCITY OF SKILLED MEN IN AVIATION

The well known veteran flyer, Charles S. (Casey) Jones, President of the Casey School of Aeronautics, Newark, N.J., writes an illuminating article in the April issue of the National Aeronautics Magazine, in which he states that there is an acute shortage of skilled men in the aviation industry, and that personnel managers have been scouring the country for trained mechanics, frequently making personal visits to sections remote from their factories and offering attractive inducements. As a result, most of the competent personnel has been absorbed and still the factories are unable to meet their delivery schedules.

Mr. Jones states that the last few years have witnessed a steady increase of business in the United States, both military and commercial. The export of aircraft has grown by leaps and bounds. Another factor responsible for the shortage of skilled men is the radical change in construction which has taken place within the last seven or eight years, when the industry has gone from stick and fabric to all-metal fabrication. Older men who have stayed in the aviation industry have had difficulty in adapting themselves to the changes, and many an expert cabinet maker or fabric worker has been forced to seek other lines of endeavor. The metals used in aircraft construction are comparatively new, and no large number of men has been trained in their use.

There has been an inclination to disparage manual labor, even though skilled, and this attitude has done much to bring about the existing condition. An analysis shows, however, that a skilled mechanic is seldom out of work.

AIR CORPS
NEWS LETTER



17TH ATTACK GROUP, MARCH FIELD
PHOTO BY 23RD PHOTO SEC.

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WAR DEPARTMENT
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Information Division
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May 1, 1937
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The chief purpose of this publication is to distribute information on aeronautics to the flying personnel in the Regular Army, Reserve Corps, National Guard, and others connected with aviation.

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THE ANNUAL MANEUVERS IN PANAMA

By the News Letter Correspondent

THE Panama Canal Department completed its yearly maneuvers, and many phases of air operations were brought out which will be highly beneficial to future operations.

On Sunday morning, March 14th, the war was on, and all Pursuiters of the 19th Wing took off for Rio Hato to establish camp, while all the Bombers were off to Aguadulce, their camp site. Theoretically, this was the Black Force, supposedly carrier-based, but which had succeeded in making a landing in Panama and were attempting to capture the Canal.

For the next two weeks we were all to be very busy firing at all hours and conducting many types of missions. The Pursuit forces assimilated Attack, and in most cases supported Bombardment in their missions, although at various times patrol missions were flown in which Blue Observation ships were sought out and attacked with great delight. Perhaps the most interesting missions flown were the attacks made on various targets by Pursuit (Attack), which by the very nature of the terrain made them highly interesting. Immediately upon designation of a target, all alert pilots would pounce upon maps and quickly decide the best general approach, and then the fun would begin.

Scraping the jungle with its 200-foot trees, the tops of which seemed sufficiently matted to invite a landing, but which are more treacherous than a rattlesnake, keeps one sitting on the edge of the chute and wishing for more eyes than the seemingly meager two provided. The terrain, being naturally rough and abundantly provided with the jungle mentioned above, gave Attack excellent covering which many times enabled them to hit an objective entirely by surprise. Of course, flying P-12's as Attack may not obtain the best results, but it gave us all a good idea of Attack Aviation in Panama, and all true "hedge-hoppers" will get an added thrill, but not without the inevitable added risk. We are all looking forward to our promised A-17's which we may have by July.

Included among Pursuit supporting Bombardment missions was one in which the main objective was to draw searchlight batteries on themselves rather than on the Bombers above. With throttles set at the throttle stop, we started our dive at 8,000 feet. After losing several thousand feet, one searchlight picked us up, and almost immediately lights from all angles were upon us. Diving through occasional wisps of clouds and being completely blinded by the lights, I soon swore that I was hanging by the prop, but keeping my eyes glued on the leader I felt much better when I saw his head duck into the cockpit and get on those good old instruments. Groping around, I finally succeeded in turning my cockpit light on and stole a glance at the instruments myself. All indicators were in the right position, altitude 2,000 feet, and there was a sigh of relief by yours truly. The lights throughout the zone remained on us for about 10 minutes, but the first several minutes seemed years at least.

On one early morning mission, the Bombers encountered a cloud bank and, in attempting to wiggle up through small breaks, succeeded in getting their formation scattered over a large area. Looking back, one amusing incident - not so amusing then - was the predicament in which one officer found himself. Flying along serenely on his leader's lights, he suddenly discovered, much to his amazement, that they were not lights at all but two stars. Anyone having flown formation on a black night following a series of maneuvers can easily see how this can happen. There he was over the clouds with no apparently friendly breaks through which to come down and not certain of his position. There was nothing left to do but fly a compass course in one direction for a certain length of time and then just reverse the procedure; so with the flaps down 20 degrees and engines throttled back, he finally located a break several hours later, and down he came. Taking off at 4:00 a.m., he landed atabout 9:00 a.m., with a brand new experience to relate to his grandchildren in later years.

Other interesting incidents occurred during the two weeks, and probably every pilot has a story all of his own which will be related at many tables with necessary diagrams drawn on expensive tablecloths.

Flying, of course, did not occupy all our time, for we had our own private little battle with the mosquitoes. Mosquito bars seemed to be of little avail, as scouts no doubt located small openings through which squadrons moved in to attack. Showing us all that they were entirely without fear, their main attack was directed against Lieut. Jack Price, whose bulk of 250 pounds scared them not one bit, so what chance did we poor smaller lads have? No cases of malaria were contracted by Air Corps personnel, however, which was very fortunate in view of the fact that the maneuvers on the Atlantic side had to be cancelled due to excessive cases of malaria.

Pilots and men at Rio Hato were not without recreation, as the best beach in Panama was only two miles from the camp and every spare moment was spent on the beach. A boat enabled a small amount of fishing, which gave us the opportunity to bolster our field ration with fresh corbina, the tastiest fish in Panama.

The maneuvers officially ended on Saturday, March 27th, with a Wing Review flown at France Field. At this time, Brigadier General George H. Brett conveyed the glad tidings of new airplanes for the Canal Zone in the not too distant future. The news of more B-10's and a number of A-17's, to be supplemented by P-26's the first of next year, is music to the ears of foreign duty officers, who have had to be content with Keystones and P-12's since their arrival in Panama.

Brigadier General Frank W. Rowell, Atlantic Sector Commander, also gave a short talk to all officers participating in the Review and congratulated the Air Corps for the fine work and spirit shown throughout the maneuvers. All in all, the Air Corps feels as if the maneuvers were very successful and that a long step towards adequate defense of the Canal had been accomplished.

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DUST STORM OVERTAKES FLYING STUDENTS

Major John V. Hart, Air Corps, senior instructor of the Pursuit Section of the Advanced Flying School, Kelly Field, Texas, spent several anxious hours in the control tower on Wednesday night, April 7th. The forecast had been "cloudy and cooler." The twenty-one Flying Cadets in that section had been dispatched at five-minute intervals on a navigation flight. Ten had been routed: Kelly - Austin - Yoakum - Pawnee - Kelly, and the others in the reverse direction.

Shortly after dark, when Captain Wilfrid H. Hardy, Air Corps, arrived at Austin to check the students, Waco, Tex., reported a dust storm, and Braniff Airlines cancelled their flight north from Austin. This information was telephoned to Kelly Field, but all students had already been dispatched.

Orders were immediately issued over four radio stations for all students to return to Kelly Field, or the nearest airport, on account of this dust storm. However, as only eight planes were equipped with radio, and most of them were out of radio range by that time, this message got through to only four students. The dust storm moved very rapidly, with a wind shift line moving at 40 miles per hour. All the students encountered the dust storm, and nineteen showed excellent judgment in landing at the nearest airport. Two students reached Austin just as the dust moved in there. Eight others landed at San Marcos; two were able to return to Kelly Field, while seven others encountered the dust farther south and returned to Pawnee.

Only two students lost their course. Flying Cadet R.F. Fallows nosed over by excessive use of brakes in making a flare landing near Schulenberg, Texas. Flying Cadet F.J. Black wrecked his airplane and broke his arm when hitting a tree in attempting a flare landing near Caldwell, Texas.

All the students reported in their location before 1:00 a.m., and remained overnight. Lieut. M.F. Stalder, the instructor at Pawnee, and the seven Flying Cadets who landed there, were the only ones who had to rough it. As there are no housing, transportation, or telephone facilities within ten miles of Pawnee, they were forced to spend a rather cold and uncomfortable night sitting around an open fire in a 40-mile wind. However, the whole section returned to Kelly Field the next day, having gained valuable experience.

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GUNNERY TRAINING BY 8TH ATTACK SQUADRON

During the month of April, the 8th Attack Squadron, Barksdale Field, La., was hard at work completing gunnery training, and now can point with pride to its combat teams. Nine pilots of the Squadron, which is commanded by Major Lester J. Maitland, Air Corps, qualified as Expert Aerial Gunners, and each remaining pilot turned in a score which at least qualified him as an Aerial Gunner.

Last fall at the gunnery camp at Fort Crockett, Texas, all the rear seat gunners were qualified with the rating of "Expert." Thus for the first time in two years (due to revision of TR 440-40 and the movement of the 8th Attack Squadron from Fort Crockett, Texas, to Barksdale Field, La.) the squadron has trained combat teams.

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Kelly Field has received some very attractive designs to represent the field. The drawings have created a great deal of interest, and the best ones will be selected by vote of the officer personnel and forwarded to Washington for approval.

CROSS-COUNTRY NAVIGATION FLIGHT BY 19TH BOMBARDMENT GROUP

By the March Field Correspondent

WITH the dawn of April 5th, fifteen Martin Bombers of the 19th Bombardment Group, under the command of Lieut. Colonel Hubert R. Harmon and squadron leaders, Majors Albert F. Hegenberger and Walter R. Peck, winged their way towards El Paso and points east on an extended cross-country navigation flight.

The first leg of the trip from March Field, the home station of the 19th Bombardment Group, to El Paso, Texas, was devoted to tactics in "fog flying." Upon advice of the Group Commander that "fog" conditions covering several hundred miles in area had been encountered, flight commanders took over and assigned base altitude, course and rendezvous points for their respective flights. Having been flying in javelin-up position until then, the Bombers now branched off right and left at an angle of 45° for one minute before taking up their new courses. All pilots took to instrument flying until informed by their navigators that the "fog area" had been cleared. All flights continued individually under the guidance of the flight navigators to El Paso. The simulated fog-blind-flying maneuver was completely successful. The Group previously had devoted considerable time to these particular maneuvers, and the results obtained justified all efforts.

After servicing at El Paso, the formation headed for San Antonio, Texas, once the home of all Air Corps pilots. On this leg, the celestial navigators of the Group started to get busy with their sextants. For experimental purposes conditions were ideal, since the air was exceedingly rough and there had been much conjecture as to the results obtainable under such flying conditions. Using three lines of position, a "fix" was obtained just prior to the arrival at San Antonio and was found to be within 15 miles of the dead reckoning position - a most gratifying outcome.

In this connection, it might be brought out that the 19th Bombardment Group makes it a habit to conduct celestial navigation on all their cross-country flights with a view to giving celestial navigators, developed by the Group School the necessary training and practice.

It will be recalled that it was the 19th Group which originally had been instructed to further development of celestial and dead reckoning navigation in the Army Air Corps. Under their care, the first school of that kind was established at Rockwell Field Air Depot. Harold Gatty, of Post and Gatty fame, was at one time instructor there for celestial navigation. Although the 19th Group no longer conducts the navigational school as a prime function, it still remains foremost in the use of such tactics and its employment in practice.

After spending the night at Randolph Field, the formation continued the next morning for New Orleans, La., arriving exactly at the time scheduled. For 40 minutes the planes circled over the city before landing at Shushan Airport. The citizens of New Orleans evinced considerable interest in the Group flight and met the incoming ships at the field. Due to the fact that Army Day was being celebrated in the Crescent City on that date, the 15 smart-looking twin-motored Army planes became the center of attraction in the celebration.

The Committee for National Defense of the New Orleans Chamber of Commerce, who welcomed the Group, made it a point to make the overnight stopover a most enjoyable one for officers and enlisted men.

With the arrival of the Group at Barksdale Field, La., the next day, weather conditions prior to the trip to Oklahoma City, Denver and Salt Lake City were studied, since severe dust storms had been reported in the areas north and west of Shreveport. The Group Commander and the Squadron Commanders thought it best to change the route so as to avoid the prevailing bad weather conditions and to choose a route more to the south on the return trip to March Field.

Immediately after leaving Barksdale Field, the ships encountered severe icing conditions - a mixture of fog and dust in cold air. Carburetor heaters were turned on and instruments were kept under strictest surveillance by all pilots, ready for immediate action in the event that ice should form. However, San Antonio was reached without the slightest trouble or mishap.

Dust was again encountered on the leg between San Antonio and March Field, reaching an altitude of 10,000 feet. The Bombers, after landing at March Field, were actually covered with a blanket of dust, but none the worse off for the experience and performing perfectly throughout. During the five days' cross-country flight, 3,000 miles were covered.

The personnel of the flight greatly enjoyed the test, and are anticipating the coming GHQ maneuvers, when once more "the life in the raw" will be taken up.

The success of the 19th Group flight was due in large measure to the advance work performed by Major James L. Grisham and Lieut. John T. Murtha, who flew ahead to make the necessary arrangements for the Group.

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Captain Mark R. Woodward, Air Corps, is under orders to proceed to his home April 30, 1937, to await retirement.

LANDING FIELDS IN PANAMA

By 1st Lieut. Robert L. Scott, Jr.

STRUNG out inland and on the coast of Panama's 1,000 miles of rugged coast line there are 47 landing fields. Some of these, classed as emergency only, nevertheless are used to advantage several times during every rainy season. These fields extend from Jaque and Pito, nearest South America, to the extreme other end of the Republic, namely, Bocas del Toro and Puerto Armuelles, or from Colombia to Costa Rica.

Only Albrook and France Fields are classed as airdromes, and as detachments can be maintained at only a very limited number of stations, the emergency fields are left very much to themselves except for necessary inspections. About 38 of these fields, classed as "Emergency," extend over a route of approximately 2,000 miles. It is easily understood that in order to visit every field at least once every month, a great deal of flying is necessary. Some of these inspections are routine and only necessary in order to pay off men regularly hired to maintain these fields. Other fields, however, it is necessary to fly in with enlisted men or to leave word at nearby villages that machete men are needed to cut back the jungle and level ant hills.

One of the hardest problems encountered from Darien to Bocas del Toro is to keep our orange windsock on the mast in its proper place rather than have it used as a skirt around some dusky Indian girl. Several times socks have been put up on Saturday, and on Monday, instead of a friendly wind sock leading us in, it could be seen on some native belle leading a flock of admiring bucks around.

On some fields, mostly on the Atlantic side, the jungle will claim a field practically overnight. Fast growing jungle, helped by over 168 inches of rainfall a year, is a real proposition. It has been found that on some sites, such as Pito, Mandingo, Changuinola, and Jaque, the grass must be cut about every sixty days, and even then a ship landing in month old vegetation tries very hard to nose over.

As with the gopher on the western plains of the United States, the hard-working ant is our greatest enemy. There must be several hundred different species here, and they all have a different method of working, which amounts in the long run to different methods of worrying the Air Corps. One type of big ant will eat all the leaves from a fairly large tree in a day, commonly known as the Umbrella Ant. This type of ant is very easily followed in the jungle, as it eats any vegetation in his way and consequently leaves a wide path of destruction. Then there is the Soldier Ant that marches in column and actually destroys everything in his path, such as camping equipment and even building material. Next is the big ant that constructs a hill of concrete-like mud, which is often from two to seven feet high. These hills are gray in color and very hard to see. Ask the pilot who has gone over on his back and then to his chagrin sees the ant hill he just didn't see when coming in to land. A small stick of dynamite and then some gasoline gets them for several months, but like a bad penny they always come back. The ideal system seems that we must interbreed the ants. If we can cross the leaf cutter with the soldier ant so that he will march in great hordes against the vegetation on the fields, then our problem is solved very cheaply. This still leaves the hill builder of the concrete-like abodes, but we'll just have to cross him with dynamite and gasoline in sufficient quantities.

Of course, we have many fields where cattle congregate and must be carefully driven off prior to landing. On some of the fields that are used frequently, the cows and horses get so accustomed to the ships that they just refuse to scare. Under these conditions, the dodging ability of the pilot is tested to the limit.

At the present time, the fields are fairly well scattered and, except for flights to the east and south, we have small worries as to forced landings. There does not, however, seem to be much possibility of ever getting fields between La Hoya (18 miles to the east) and Jaque (165 miles to the southeast). Between these two places there is just jungle, water and mountains. Projects for the near future include fields at Gamboa - half way between Albrook and France Fields - another at Mafafa on the Island of Del Rey in the Perlas Group, with the possibility of a Sailfish Club at some date in the future. A very strategic field is to be constructed near the Navy Radio Station on the tip of the Mala Peninsula. This will give us fields on either shore of the Panama Gulf, and one in the middle on the Perlas Islands, which will give us a very effective net of fields from which to operate if it becomes necessary to protect the Canal.

In closing, it can be said that sooner or later Emergency Landing Fields pay for themselves in Panama, not only for forced landings but to increase our limited training in navigation at this station of foreign duty, also as storage spots for fuel and as radio stations for weather and Aircraft Warning Service.

PURCHASE OF NEW EXPERIMENTAL BOEING BOMBARDMENT PLANE

As an indication of the constant desire of the Army Air Corps to explore every potentiality of the airplane in National Defense, there is nearing completion, under Government contract, at the Boeing Airplane Company, Seattle, Washington, a giant Bombardment plane, which promises to be one of the greatest weight-carrying airplanes in the world.

This latest experimental Bombardment airplane comes as a natural successor to the YB-17 type which created such a sensation in its test, and which was popularly labeled the "Flying Fortress." The new plane embodies further developments of the YB-17, which itself ranks among the foremost Bombardment airplanes in the world. It was developed as part of the Air Corps' program in answering a long standing question: What form shall the Bombardment airplane take - a comparatively small, fast, light weight-carrying craft; a larger, maximum weight-carrying machine, or a compromise of the two?

The Air Corps now has examples of two of the three types, - the twin-engine Martin Bombers, representing the smaller, light weight-carrying craft, and the YB-17's, the compromise type. Completion of the new Bomber, representing the maximum weight-carrying machine, will afford the Air Corps the opportunity to compare all three, with a view to determining which type is most desirable from engineering, tactical, and operating standpoints.

Under cover of utmost secrecy, the project has been under way for more than two and a half years. A total of 670,000 man hours of engineering work and shop labor has gone into the construction of this new national defense weapon. The thoroughness with which the project has been carried out is indicated in one of the static tests employed to prove beyond any doubt the correctness of engineering computations. A complete wing panel was built, weighted with lead and "tested to destruction." In the static test of this wing panel the strength requirements were greatly exceeded before it finally broke down.

This latest vehicle of National Defense is a four-engined, all-metal, mid-wing type monoplane, basically similar to the YB-17, although somewhat larger because of its additional weight-carrying capacity.

The plane is powered with four Pratt & Whitney twin Wasp Sr. engines, each giving 1,000 horsepower for take-off, and is provided with the most modern of safety devices, including elaborate radio equipment, automatic pilot, de-icing installations, apparatus for fire protection, wing flaps to reduce its landing speed, a complete heating and ventilating system, and sound-proofing throughout. In addition, it is fitted with air-operated wheel brakes similar to the YB-17 Bomber, both the landing gear and tail wheel being retractable. The first military plane ever built with living accommodations aboard, it contains sleeping quarters, spacious working quarters for personnel, lavatory, kitchenette with electric hot plate, percolator, soup heater and dry-ice box.

All of the above mentioned modern safety, navigation and comfort devices have been incorporated to increase the physical endurance of the personnel and the combat efficiency of the plane for sustained operations.

Thus the Army Air Corps, which in the past, in cooperation with commercial organizations, pioneered in projects later adopted by commercial aviation, has again made its contribution to the progress of civil aviation. This is evidenced when it is realized that, although this airplane was designed to adapt its large weight-carrying capacity to the transportation of military personnel or equipment, it naturally points the way to larger commercial transport planes.

The project of solving the large Bombardment airplane problem was first undertaken by the Army Air Corps during the period 1920-1925. At that time, realizing the necessity for this type of airplane, the Engineering Division, now the Materiel Division of the Air Corps, designed the NS-1, better known as the Barling Bomber. It was a tri-plane with a wing span of 120 feet. It was powered by six Liberty engines, had a maximum speed at sea level of 96 miles an hour, and a service ceiling of 7,275 feet. The plane established world's records of that period for altitude, duration of flight and weight-carrying.

Due, however, to certain objectionable structural features inherent in the wood construction of the period, the project was temporarily placed in abeyance. With the advent of the modern, all-metal, monoplane type of construction, and the increased horsepower of aeronautical engines, the project was again undertaken.

Although many of the details of this latest Bombardment airplane are necessarily clothed in secrecy, due to its experimental nature, it is known, as stated before, that in general appearance it will closely resemble the YB-17 all-metal, mid-wing type of semi-monocoque construction, consisting of longerons, skin stiffeners, bulk heads and smooth outside metal skin. Because of its greater weight-carrying capacity, it will have a greater wing span, and will exceed the 16-ton weight of the YB-17 by approximately three or four tons.

Its retractable landing gear and tail wheel add materially to its speed, although its maximum and operating speeds will be considerably below those of the YB-17.

It is equipped with electrically controlled multi-position, constant speed three-bladed propellers. The general arrangement of defensive armament is similar to that of the YB-17's, installed in streamlined "Blisters" and turrets.

An electric supply comparable to that used in the modern home and factory will traverse the skies in this remarkable new Air Corps Bombardment plane now undergoing final stages of construction in Seattle. In this connection, it will have the distinction of being the first aircraft in the world to carry a full 110-volt alternating current electrical system. Until now, electrical current used in airplanes has been supplied through 12-volt direct current system. The new Bomber's system compares with the old as the common 110-volt current used in cities throughout the world compares with the home-generated low voltage direct current system used by the isolated farmer. It opens a new epoch in aircraft progress.

Two auxiliary gasoline power plants drive the generator supplying this current to the electrically operated parts of the new Bomber. In addition to increased efficiency, a reason for the installation of the system was that power requirements of the Bomber, one of the greatest weight-carrying planes in the world, are so large as to make it impractical to put the electricity generating load on the plane's engine, as has been the method in the past.

There are approximately seven miles of electrical wiring in the Bomber's intricate system. The current is distributed to all electrical devices in the plane with the exception of the ignition, where the conventional magneto system is employed. Among the features included is a complete system of lights which flash as indicators, registering the functioning of various apparatus throughout the plane.

Another feature disclosed, as the new plane is being groomed for its first flight, is the provision for a five-lens aerial camera. The vast possibilities of aerial photography from Bombardment aircraft were indicated in the flight of 1934 of a squadron of Bombing planes from Washington, D.C., to Alaska, when 35,000 square miles were photographed in three days during the trip.

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Special Orders of the War Department, recently issued, announced the promotion of Captain Hugh C. Downey, Air Corps, to the temporary rank of Major, Air Corps, from April 13, 1937.

ANNUAL INSPECTION OF KELLY FIELD

Colonel Roy C. Kirtland, Inspector General's Department, finished his inspection of the Air Corps Advanced Flying School, Kelly Field, Texas, on April 20th, and departed that night by train for Washington, D.C. He had been at Kelly Field since April 10th, making the required annual inspection. His comments were that the Air Corps Advanced Flying School was doing an excellent job with the obsolete facilities they had to work with.

Colonel Kirtland, one of the oldtimers in the Army Air Corps, has been on duty in the Inspector General's Department, Washington, since July 18, 1936. He was the first graduate of the Army's first pilots' school in 1911 at College Park, Md. Several Army officers had learned to fly shortly before this, but they were instructed either by the Wright Brothers or by Glenn Curtiss.

Stationed at Texas City, near Galveston, Texas, in 1913, Colonel Kirtland was engaged in testing the use of the airplane for observation purposes, in cooperation with the 22nd Infantry, which was also stationed at Texas City. Colonel Arnold N. Krogstad, Commandant of the Advanced Flying School, Kelly Field, and Lieut. Colonel Roy M. Jones, now Executive Officer at Kelly Field, were serving with the 22nd Infantry at that time. Colonel Kirtland also made his first night flight at that time.

Colonel Kirtland wears the "Order of the Crown," a decoration from the Italian Government, and service ribbons for the Spanish-American War, the Philippine Insurrection, the Mexican Border and the World War.

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COMMENDATION FOR ADVANCED FLYING SCHOOL

The following commendation was received from the Chief of the Air Corps by the Commanding General of the Air Corps Training Center, Kelly Field, Texas:

> "The kind and amount of publicity secured by the Air Corps Training Center at the time of the long cross-country flight immediately before graduation (February 1937) was very gratifying to the Chief of the Air Corps. The amount of publicity secured shows the effectiveness of the changed itinerary for the long cross-country flight."

The above was referred to Colonel Arnold N. Krogstad, Commandant of the Air Corps Advanced Flying School, with the following remark by Brigadier General J.E. Chaney, Commanding the Air Corps Training Center:

> "The success attained in this phase of the mission is indicative of the ex-

(Continued on Page 12).

VARIETY IS THE SPICE OF LIFE

By the Hamilton Field Correspondent

FOR four Saturdays recently, the 7th Bombardment Group at Hamilton Field, commanded by Lieut. Colonel George E. Stratemeyer, conducted four very interesting and instructive tactical operations in order to test the efficiency of the Group as a whole.

On the first of these Saturdays, the inspection consisted of a Group assembly problem for checking the efficiency of the squadron commanders' crews in navigation. The participating organizations (9th, 11th and 31st Bombardment Squadrons) took off in the early morning, formed a javelin-up formation, and proceeded to the initial point. The location of the Group Assembly point, and the separate routes to be flown by each squadron in arriving there, had been withheld from all personnel taking part in the exercise until just before the take-off; so the Group flew for twenty minutes in formation to the initial point with all the navigators frantically working out their computations in order to rendezvous after leaving the initial point in exactly 80 minutes from the time of take-off.

Major J.G. Taylor, commanding officer of the 31st Bombardment Squadron, was leading the Group formation, and upon arrival over the initial point he dispatched the squadrons on their respective routes to the assembly point. All points were given to the squadrons in latitude and longitude just to make it tough.

Exactly 80 minutes after the take-off, Lieut. Colonel Stratemeyer, who was flying high above the assembly point, checked off the squadrons as they roared into view. The Colonel was the only officer in the air who knew the location of the assembly point before the take-off, and he had proceeded there directly to inspect the completion of the operation. The Group then assembled under the command of the Group Commander and proceeded to Hamilton Field.

On the following Saturday, the Group Commander inspected a bombing mission to destroy an "enemy" aircraft factory located at 38° 03' 18" N and 122° 23' 54" W, which coordinates located the Hamilton Field bombing target in the mudflats of San Pablo Bay. The 9th, 11th and 31st Bombardment Squadrons took off at one-minute intervals, all deadly intent on blowing the "enemy" factory to bits. Each airplane of each squadron flew an individual route to its squadron initial point, so that there was not a single navigator who did not receive practice in his art and who was not partially reresponsible for the correct performance of the mission. The three squadrons finally formed over three widely separated points in Northern California, and the leading navigator of each squadron directed his squadron to the Group assembly point, departing at exactly 9:00 a.m.

The Group assembly point was designated by latitude, longitude, altitude and time. There were no mistakes. Each squadron appeared like clockwork, and formed in a group column with the 9th Bombardment Squadron, commanded by Captain K.N. Walker, leading the formation and navigating. Upon arrival over the initial point, located just outside the range of the assumed anti-aircraft batteries, the Group echeloned to the right with an interval of a thousand yards between squadrons. At the same time the Group echeloned in altitude from 8,000 to 12,000 feet. Then individual airplanes were echeloned to the right and in altitude so as to allow an interval of 500 yards between each one, and permitting each bomb dropped to be aimed by each bombardier, as well as insuring against a casualty to not more than one airplane by one burst of assumed anti-aircraft.

As the Group approached the target in the attack formation, bombardiers were all busy with their sights, checking drift, opening bomb bay doors, and finally holding the cross hairs on the target in anticipation of a bullseye. The bombing speed had been designated for each airplane, and graduated down from front to rear of the formation so as to prevent any airplane from overrunning the one ahead and below, insuring against the possibility of the higher airplanes dropping bombs on the lower ones.

Because of a scarcity of bombs on the field at that time, only one bomb per airplane was dropped, but the results were such that had there actually been an aircraft factory in that position, it would be there no longer. Bombs sprinkled in and very near to the center of the target, and the anti-aircraft fire was so poorly directed that not a single airplane dropped out of the formation.

After releasing the bombs, each airplane turned sharply to the left so as to depart from the danger area over approximately the same route of attack, and thereby further confuse the anti-aircraft by increasing the targets for the batteries already in action. The Group then rallied over Pinole Point at 6,000 feet and proceeded in formation to Hamilton Field, having passed the tactical inspection to the satisfaction of the Group Commander.

On March 6th, the Group Commander thought up an even better test for his organization, and a high altitude bombing and performance mission was ordered.

The 9th, 11th and 31st Bombardment Squadrons took off at 30-minute intervals, climbed to the predetermined altitude with a full military load, including five 300-lb. bombs, and began dropping them on the target. The first two passes were made by individual airplanes, and the third pass over the target was a squadron salvo, individually, in which the remaining three bombs were released from each airplane. Everything went smoothly, except that the last squadron to bomb was forced to drop down to a lower altitude after their second pass for the last pass-over. No difficulty, however, was experienced in attaining the required altitude with a full military load, as all airplanes reached it at the proper time without mishap.

On March 13th, Lieut. Colonel Stratemeyer went into a huddle with his Operations Officer, 1st Lieut. F.L. Anderson, and emerged with an entirely new operation to test his Group. A simulated night bombing mission was the exercise scheduled. Prior to the bombing itself, each squadron was ordered to practice airdrome technique and formation flying, which they did with skill and enthusiasm for an hour or more. Old Man Weather put a crimp in the operation, however, by fogging in the assembly point and much of the surrounding country. Squadrons were finally ordered by radio to bomb at a much lower altitude than had previously been designated, but the exercise, which consisted of the dropping of one 300-lb. bomb per airplane, using the flight method of attack, was conducted satisfactorily regardless of the low hanging clouds and mist.

The personnel of the 7th Bombardment Group are wondering what the next tactical inspection will be like. But they are sure of only one thing, and that is that whatever exercise is scheduled it will be unlike any of the others, and no one will suffer from lack of enthusiasm.

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CHEMICAL WARFARE DEMONSTRATION

The 90th Attack Squadron, Barksdale Field, Shreveport, La., dispatched six A-17 Attack airplanes to Fort Benning, Ga., on April 1st, for the purpose of participating in a Chemical Warfare Demonstration at the Infantry School for the instruction of the regular class of students.

The flight was commanded by Captain William N. Amis, Air Corps, the 90th Squadron Commander, and included the following additional pilots: 1st Lieut. Harvey P. Huglin, 2nd Lieut. James H.C. Houston, Air Corps; 2nd Lieuts. John F. Guilmartin and James C. McGehee, Air Reserve, and Flying Cadet Edward F. Cullerton. Six mechanics accompanied the flight.

Due to the lack of sufficient dye, the airplanes were loaded with one tank of dye and one tank of smoke per airplane. The attack was made in column of elements at 3:30 p.m., the time scheduled. The target consisted of "enemy" troops, represented by the students of the Infantry School. The results of the attack were estimated at about 60 percent casualties.

The flight returned to Barksdale Field on April 2nd.

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FILIPINO GENERAL VISITS KELLY FIELD

Major General Basilio Valdes, Deputy Chief of Staff of the Philippine Army, made an unofficial inspection of the Air Corps Advanced Flying School, Kelly Field, Texas, on Monday afternoon, April 19th. He was returning from Mexico City, where he had accompanied President Queson and General Douglas MacArthur.

General Valdes was interested in all student training activities, since flying training is just being started in the Philippine Army. He was especially interested in Observation training and commented favorably on the miniature range, which is used to give students preliminary observation training on the ground. The methods used to teach instrument flying particularly attracted his attention, and he stated that they would purchase a Link Trainer for their use.

Evidencing pleasure in meeting Flying Cadet Jesus A. Villamor, who is a Filipino student in the present class at the Advanced Flying School, he was also happy to renew acquaintances with Major W.E. Richards, Captain W.G. Bryte and Lieut. A.W. Kissner whom he had known in Manila.

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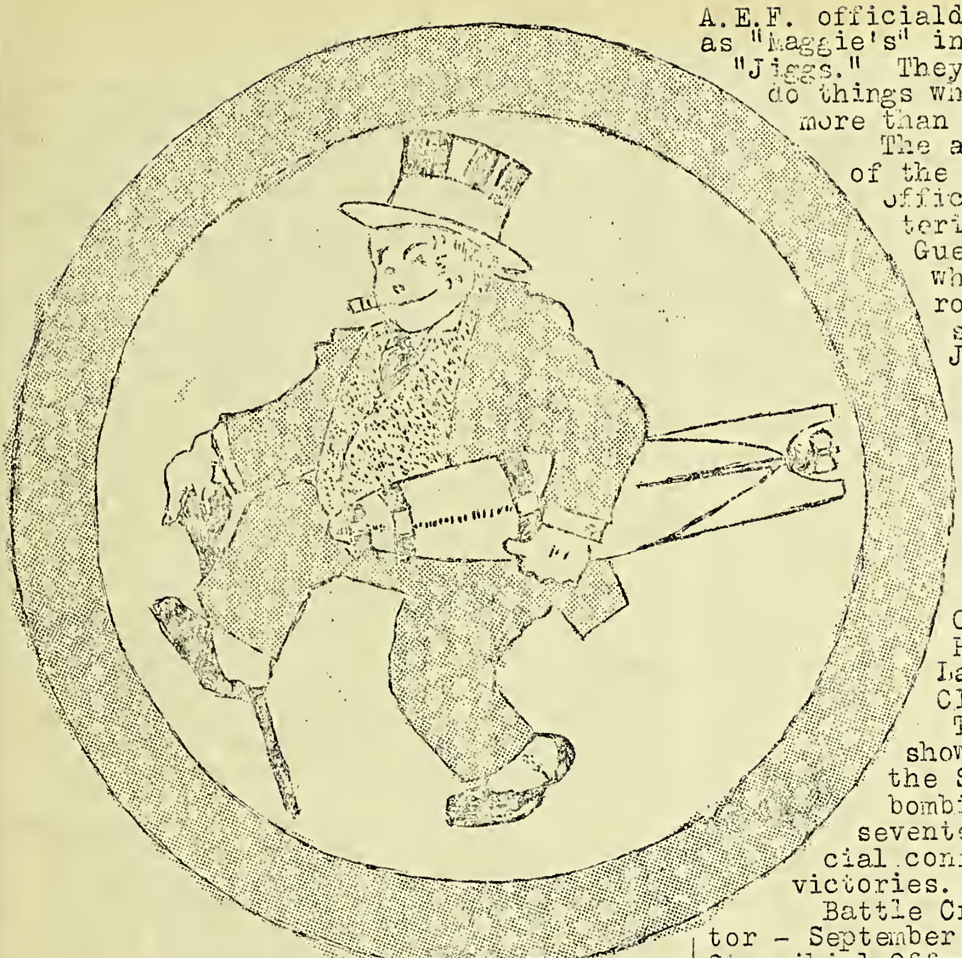
COMMENDATION FOR 8TH ATTACK SQUADRON

Pointing with pride to the excellent record attained by the 8th Attack Squadron with respect to the qualification of its pilots in aerial gunnery, the Barksdale Field Correspondent, touching on other things, states:

"Perhaps our greatest reason for pride is contained in a letter of commendation from Colonel W.H. Frank, Commanding Officer of the Cold Weather Equipment Test Group, which was stationed at Selfridge Field and Oscoda, Mich., last February. To quote Colonel Frank:

'This squadron was outstanding in its operation, showed superior morale, superior airdrome discipline, and superior flying discipline. * * * It is decided to commend him (Major Lester J. Maitland) for the high quality of his work and that of his squadron during the test and to congratulate him upon having one of the most efficient and smoothly operating squadrons that I have ever seen in the service.' We feel that each man perform-

(Continued on Page 11).



INSIGNIA OF 11TH BOMBARDMENT SQUADRON

"Mr. Jiggs" has the distinction of being the only comic character to cover himself with glory in aerial battles over the front lines during the World War, which he gained by riding the nose of the planes of the 11th Aero Squadron as their official insignia.

This was somewhat of a different role from the one known to all the people from Boston to Borneo in the comic strip by George McManus, and the reason for this beginning of a dual existence may necessitate some explanation.

To explain this new role for Jiggs, we must go back to the war time organization of the 11th Aero Squadron in July, 1917, and remember that after five months of intensive training at Scott Field, the outfit was sent overseas. Instead of being assigned to active duty, it was given another long period of intensive training over the landscape of England.

During this period, the members of the 11th became restless and anxious to see some results of the training they had been receiving for so long a time. Privates Hal Green and Laurence Larson conceived the idea of Jiggs for the Squadron insignia, and it was given favorable consideration for two reasons. In the first place, the restraining hand of the A.E.F. officialdom was as much upon them as "Maggie's" indomitable will was upon "Jiggs." They couldn't go places and do things when the urge came any more than "Jiggs" could.

The attitude of the members of the 11th Aero Squadron is officially preserved for posterity on a "Souvenir de Guerre" showing "Jiggs" when he became the Squadron insignia. The inscription reads: "Mr. Jiggs, borne in the mud of Maulan at the start of the Argonne offensive, whose omnipresent smile seems to exemplify the indomitable spirit of the 11th Squadron despite rebuffs and disappointment in its efforts to get into the fray. Originated by Privates Hal Green and Laurence Larson, painted by Sergeant Clement Jenkins."

The unofficial records show that "Jiggs" accompanied the Squadron on thirty-two bombing raids, engaged in seventeen combats, and has official confirmation of thirteen victories.

Battle Credits: Defensive Sector - September 8/11. 1918. Lorraine.
St. Mihiel Offensive - September 12/16, 1918. St. Mihiel.
Defensive Sector - September 17/25, 1918. Lorraine.
Meuse Argonne Offensive - September 26, November 11, 1918.

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SPRING HAS NOT YET "CAME."

Touching on the encampment of the Headquarters and Headquarters Squadron, 8th Pursuit Group, GHQ Air Force, the scribe of that organization has this to say:

"In camp at Virginia Beach, Virginia, April 13, 1937. Great shades of Boreas, but it was cold last night!!!! B-r-r-r-r! Sergeant Boudreaux's 'Sibley' got to acting up, and this morning he was heard to remark that 'he knew just how a Virginia ham felt.' Very little sleep was had by anyone in camp last night, but a substantial breakfast of scrambled eggs, bacon, toast, coffee, fresh milk and grapefruit, served by Mess Sergeant Biggers of the 35th Pursuit Squadron, put everyone in a good humor this morning. Of course, the warm sunshine helped, too. If the weather man will only be kind, one and all are prepared to enjoy camp life for the next two weeks."

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Effective April 30, 1937, Captain Cornelius J. Kenney, Air Corps, goes on the retired list for disability incident to the service.

BIOGRAPHIES

LIEUT. COLONEL THOMAS J. HANLEY

Lieut. Colonel Thomas J. Hanley, Air Corps, now on duty at Mitchel Field, L.I., New York, as Commanding Officer of Base Headquarters and 2nd Air Base Squadron, was born at Coshocton, Ohio, March 29, 1893. He attended the public schools and high schools of Coshocton, and graduated from the U.S. Military Academy on June 12, 1915. Appointed a second lieutenant and assigned to the 23rd Infantry, he served with his regiment at Texas City, Texas, from September 12 to 20, 1915; was on detached service at Jacksonville, Fla., in connection with the National Rifle Matches to December 3, 1915; and on duty with his regiment at Galveston, Texas, to March 10, 1916, and at El Paso, Texas, to August 7, 1916. He was then attached to the Aviation Section, Signal Corps, to undergo flying training at the Signal Corps Aviation School at San Diego, Calif. Upon the completion of his training he was, on April 8, 1917, assigned to duty with the 1st Aero Squadron at Columbus, New Mexico. A month later, he was transferred to Kelly Field, Texas, where he was on duty with the 5th and 19th Aero Squadrons to July 10, 1917, when he was transferred to Chanute Field, Rantoul, Ill., where he served as Officer in Charge of Flying to August 27, 1917, and Commanding Officer of the 38th Aero Squadron to January 2, 1918. He was Assistant Officer in Charge of Flying at Rich Field, Waco, Texas, to February 23, 1918; Commanding Officer of the 274th Aero Squadron at Taliaferro Field, Texas, to March 16, 1918; Engineering Officer of the post to May 10th, and Commanding Officer from March 25th to April 9th.

Colonel Hanley's next assignment was at Carruthers Field, Fort Worth, Texas, where he was Commanding Officer from May 10 to October 21, 1918; Executive Officer to November 11, 1918, and Officer in Charge of Training to January 4, 1919. From January 8 to February 27, 1919, he took an advanced course in Pursuit flying at Rockwell Field, Calif., and then returned to Carruthers Field and was in command thereat until December 18, 1919.

Transferred to Langley Field, Va., he served as Executive Officer from January 6 to June 5, 1920; Commanding Officer of the 1st Army Observation Group to August 25, 1920, and performed the duties of Summary Court Officer and Surveying Officer in addition.

Ordered to Post Field, Fort Sill, Okla., Colonel Hanley organized a detachment of the 135th Squadron, and then proceeded with this unit to Fort Leavenworth, Kans. and was in command of it at that station until November 6, 1920. He then proceeded to Langley Field and was assigned to duty at the Field Officers School (later the Tactical School) as Director of the Administration course and as a student as well. In May, 1921, he commanded the 2nd Provisional Bombing Group, also the 14th Squadron, serving in the latter capacity to September 18, 1921. He commanded the 1st Provisional Bombardment Wing to September 30th, was an instructor at the Field Officers School to December 16, 1921, and was then transferred to the Philippines. Assigned to station at Kindley Field, Fort Mills, P.I., he commanded the 2nd Observation Squadron from March 7 to August 7, 1922; the Provisional Administration Company to September 22, 1922, and was then transferred to Camp Nichols and commanded this post and the Air Depot thereat to May 16, 1923. From that date until the end of his tour of duty in the Philippines, he commanded the 28th Bombardment Squadron, served as Post School Officer and Post Operations Officer and at various times was in temporary command of the post.

After commanding Crissy Field, Presidio of San Francisco, Calif., and the 91st Observation Squadron from March 7th to August 3, 1924, he was transferred to Washington, D.C., for duty as a student at the Army Industrial College. From February 2, 1925, to August 22, 1928, he was on duty in the Office of the Assistant Secretary of War.

Upon completing a two-year course of instruction at the Command and General Staff School at Fort Leavenworth, Kansas, Colonel Hanley's next assignment was at Kelly Field, Texas, where he was Executive Officer of the Advanced Flying School and the 10th School Group to August 7, 1930; Assistant Commandant of this school to October 22, 1931, and at various times was in temporary command thereof. He was transferred to the Primary Flying School at Randolph Field and served as Executive Officer and Assistant Commandant to June 1, 1932.

For the next four years, Colonel Hanley was on duty as instructor at the Command and General Staff School at Fort Leavenworth, Kansas. Upon his relief from duty at Fort Leavenworth, he was assigned to his present duties at Mitchel Field.

Colonel Hanley was promoted to 1st Lieut., July 1, 1916; to Captain, May 15, 1917; to Major, May 24, 1925; and to Lieut. Colonel, December 1, 1936. He held the temporary rank of Major from July 10, 1918, to March 1, 1920, and that of Lieut.Colonel from August 25, 1918, to October 17, 1918, and from June 16 to December 1, 1936. He is on the General Staff Corps eligible list.

LIEUT. COLONEL ADLAI H. GILKESON

Lieut. Colonel Adlai H. Gilkeson, Air Corps, now on duty at Langley Field, Va., as Commanding Officer of the 8th Pursuit Group, GHQ Air Force, was born at Lansdale, Pa., January 25, 1893. He attended public schools and high school at Sellersville, Pa., and after graduating from the U.S. Military Academy, West Point, N.Y., June 12, 1915, was appointed a second lieutenant and assigned to the 11th Infantry, with which he served at Douglas, Arizona, September 12, 1915, to September 10, 1916.

Attached to the Aviation Section, Signal Corps, Colonel Gilkeson, after completing his flying training at the Signal Corps Aviation School, San Diego, Calif., was assigned on May 19, 1917, to the 1st Aero Squadron at Columbus, New Mexico. He received the rating of Junior Military Aviator June 20, 1917. From July 7 to September 24, 1917, he was Commandant of the School of Military Aeronautics, Princeton University, and from September 28, 1917, to January 5, 1918, he was on duty at Chanute Field, Rantoul, Ill. After serving as Engineer Officer at Rich Field, Waco, Texas, to April 5, 1918, and as Officer in Charge of Flying at Wilbur Wright Field, Fairfield, Ohio, to August 17, 1918, he returned to Chanute Field and was stationed there until January 16, 1919.

Transferred to Aberdeen Proving Ground, Md., Colonel Gilkeson commanded the 217th Aero Squadron there to April 3, 1919. He was on duty at Hazelhurst Field, Mineola, L.I., New York, to October 1, 1919; with the 60th Infantry at Camp Gordon, Ga., to August 25, 1920; Executive Officer at Carlstrom Field, Arcadia, Fla., to July 1, 1921; and, prior to sailing for duty in the Philippines, served a little over a month at Crissy Field, Calif.

After completing a two-year tour of duty in the Philippines as commanding officer of Clark Field and the 3rd Pursuit Squadron, he was assigned to duty as Professor of Military Science and Tactics at the Massachusetts Institute of Technology, Cambridge, Mass. Upon his relief from duty at the M.I.T., Colonel Gilkeson was a student at the Chemical Warfare School, Edgewood Arsenal, Md., September 14 to November 21, 1925, and thereafter, until June 8, 1928, he remained on duty at this station as Air Corps Liaison Officer.

From June 27, 1928, to July 2, 1929, he was a student at the Air Corps Engineering School at Wright Field, Dayton, Ohio. Thereafter, until September 1, 1931, he was Chief of the Equipment Branch of the Air Corps Materiel Division, Wright Field. Following his graduation from the one-year course at the Air Corps Tactical School, Maxwell Field, Ala., June 10, 1932, Colonel Gilkeson was assigned to duty with the 1st Pursuit Group at Selfridge Field, Mich., as Executive Officer and Officer in Charge of Flying. While assigned to this station, he was on duty with the Civilian Conservation Corps for 13 months.

From November 22, 1934, to March 3, 1935, Colonel Gilkeson was on duty at Fort Sam Houston, Texas, with the Organized Reserves, 8th Corps Area. Since March 6, 1935, he has been on duty with the GHQ Air Force at Langley Field, Va.

Colonel Gilkeson, during February, 1936, commanded the provisional group which was engaged in conducting cold weather tests of clothing and equipment in the New England area.

Colonel Gilkeson can probably lay claim to making the lowest emergency parachute jump on record. On October 5, 1927, when he was stationed at Edgewood Arsenal, Md., he was testing a Pursuit plane to determine the glide necessary to attain a speed of 200 miles an hour. When 50 feet from the ground, a loud crash, followed by a severe jolt which jerked the plane about 45 degrees to the right, was noted. A cloud of gas, oil and water enveloped the ship as it shot up in the air to about 150 feet, rolled to the right and then started down. At 100 feet Colonel Gilkeson left the ship by parachute when the plane rolled completely over, its inverted position aiding him to a very great extent in leaving it and saving seconds which were precious. The opening of the parachute was followed almost immediately by his landing on the ground, and he had no time to realize any other sensations other than that the ground was coming up too fast and that he was too close to the falling plane.

Colonel Gilkeson was promoted to 1st Lieutenant on July 1, 1916; to Captain, May 15, 1917; to Major, July 18, 1925; and to Lieut. Colonel, December 24, 1936. He held the temporary rank of Major from August 15, 1918, to February 25, 1920, and that of Lieut. Colonel, from March 2, 1935, to December 24, 1936. His total flying time exceeds 4,000 hours.

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Commendation for 8th Attack Squadron

(Continued from Page 8)

ed his duties well and that such a commendation goes far towards raising morale by recognition of the effort put forth."

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The 37th Attack Squadron, GHQ Air Force, Langley Field, Va., recently received and installed the new chemical tanks for its A-17 Attack planes. During the middle of April, according to plans previously made, the Squadron was scheduled to demonstrate its efficiency with chemicals and fixed guns before the Chemical Warfare Classes at Edgewood Arsenal, Md.

AUTOMOBILE COMFORT IN AN AIRPLANE

A new type of cockpit that certainly should please all Air Corps pilots is being evolved. At present, this new arrangement exists on paper only, but soon a mock-up will be built and placed in the Operations Office at Bolling Field, where all resident and visiting pilots will be invited to take a try at it and to jot down their comments for further use of the designers.

Its principal feature is the new padded seat, built on the general lines of the old seat, but with a back several inches higher and a seat considerably longer, which will certainly be less trying to the pilot's legs and back. Parts of both the back and seat cushions, corresponding in size and shape to the size and shape of the back and seat pack parachutes, are removable. The seat slides backward and forward on an 8-inch track, and can be locked in any one of sixteen different positions (the pin holes being only ½ inch apart), thus permitting the pilot to choose the most comfortable distance from both stick and rudder. The up and down adjustment of the old seat is retained, and the back remains tilted at 13½ degrees but, by means of a lever on the left side, the seat itself may be tilted upward two inches when desired. A new type of safety belt, the shoulder type, is being tested on this seat. Its principal advantage is that, normally, it may be worn loosely enough to give the pilot free forward movement, but, if a crash is imminent, it may be instantly tightened to hold the pilot securely against the cushioned back.

Entrance to this new cockpit will be possible from either side through doors operating in the same manner as the doors of an automobile. For emergency exit with a parachute, it will be possible to release the hinge pins, thus allowing the door to fall and give the pilot a maximum freedom of exit. Besides, as a final safety measure, if for some reason these pins should jam, a means is provided for opening an exit above the pilot.

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Commendation for Advanced Flying School

(Continued from Page 6).

cellent planning, supervision, and excution of this flight by all concerned."

This flight was the Student Maintenance Navigation Flight for the student class at the Air Corps Advanced Flying School which graduated on February 17, 1937. The itinerary of the flight included stops at five universities, namely, the University of Alabama, Alabama Polytechnic Institute, Georgia School of Technology, University of Georgia, and the Louisiana State University. Students of these schools evinced considerable interest in aviation.

NIGHT ATTACK MISSIONS BY 3RD ATTACK GROUP

The peaceful charm of early evening at Barksdale Field, Shreveport, La., has been considerably disturbed during recent weeks. The Third Attack Group has been completing its training schedule. Householders watering lawns and others communing with nature on various parts of the reservation have been startled by element after element passing low across the flying field and firing into the range to the east, returning later to drop parachute bombs and spray limewater along the same route. Blazing parachute flares, the staccato crack of machine gun fire, and the sudden appearance of white lime water spray and parachute bombs in the wake of attacking elements have provided something of a spectacle.

Not so apparent is the careful planning and training necessary to allow two separate squadrons to operate against one target at night. The difficulty of handling an airplane and three weapons in low altitude formation in the dark, and the eyestrain involved in trying to locate a target from a low altitude in the black distance early enough to maneuver a squadron into the exact time and angle of approach may well be appreciated. While it was not feasible to score the machine gun firing, it was possible to measure the disposition of the bombs and spray. A surprising degree of accuracy was achieved with these weapons.

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AERIAL PHOTOGRAPHS OF CONCHOS DAM

Pursuant to War Department orders, 1st Lieut. Charles F. Densford and Staff Sergeant Herman L. Chestnutt, of the 22nd Photo Section, Kelly Field, San Antonio, Texas, took off by air on April 15th for the purpose of obtaining aerial photographs of construction progress on the Conchos Dam project in New Mexico. Lieut. Densford's orders required him to contact the District Engineer, U.S. Engineer Office, Conchas Dam, in regard to details and arrangements for taking the photographs.

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In recognition of his research and experimental work in blind landing systems, Private Edward M. Sorenson, of the Headquarters and Headquarters Squadron, 20th Pursuit Group, Barksdale Field, La., was transferred to the Air Corps Material Division, Wright Field, Dayton, Ohio, to continue his work on the subject.

The two systems as devised by Private Sorenson have held up extremely well in the basic analysis, and it is expected that he will build experimental models of his apparatus and conduct tests at Wright Field. Details of his systems are not ready for publication at the present writing.

AERIAL GUNNERY BY THE 20TH PURSUIT GROUP

By the News Letter Correspondent

The 20th Pursuit Group, Barksdale Field, La., engaged in high altitude aerial gunnery practice at Fort Crockett, Galveston, Texas, between the dates of March 24th and April 20th, 1937. A permanent camp was established on the airdrome at Fort Crockett, and operations were conducted by successive squadrons working individually.

The 77th Pursuit Squadron, under the command of Major Carlton F. Bond, Air Corps, opened the camp under most unfavorable weather conditions and was considerably handicapped at the outset of operations. "Unusual" spring weather, including fog, rain and extreme cold, forced the grounding of all planes for the most part of the first week. Considerable damage was dealt the camp on the first night after its establishment by a severe wind and rain storm. The cold which followed made Sibley heaters a welcome addition to all tents.

Operations in night gunnery were carried on with the assistance of an A-17 airplane acting as target and the Coast Artillery anti-aircraft playing searchlights upon it. Flying at night was done from the Galveston Municipal Airport because of the small size and inadequate lighting facilities at the Fort Crockett Airdrome.

The 77th Squadron was followed in order by the 55th and 79th Pursuit Squadrons, with Captain M.R. Nelson and Major Frank O'D. Hunter, respectively, in command.

An innovation into the schedule was supplied by the 55th Squadron, which fired .50 caliber guns at the towed sleeve. This was the first .50 caliber aerial gunnery to be attempted in the 20th Pursuit Group. For the accomplishment of this mission, the usual 600-foot tow rope was lengthened to 1,000 feet, and the firing was done from a distance of 500 feet. Tragedy overtook the 55th Squadron encampment when, on April 7th, Lieut. A.E. Livingston, Air Reserve, dived into the Gulf of Mexico from 6,000 feet and was killed. He was towing a target at the time of the accident.

The 79th Squadron entered the camp on April 13th and, upon completion of their firing, closed the camp and returned to Barksdale Field on April 20th.

Thirty caliber firing was carried on at altitudes of 5,000, 10,000 and 15,000 feet both by individual airplanes and elements. Stress was laid on similating actual combat conditions rather than upon attempting to make high scores throughout the training schedule. A decided difference was noted in handling of the ships and in firing at high altitudes when compared with the normal firing down at 5,000 feet.

During the night operations, guns were not loaded, and attacks were made upon an A-17 airplane instead of upon the towed sleeve. The Coast Artillery played powerful searchlights on the target while attacks were made by elements, care being taken to keep the attacking ships out of the glare of the lights to prevent involuntary blindness. All squadrons participated in .30 caliber firing and in night gunnery operations, and the 55th Squadron fired, in addition, a number of missions with .50 caliber. A modified form of standard tow rack was used throughout, thus enabling the tow rope to be doubled on take-off and increasing the efficiency of tow ship operation from a small field.

A modified rack was designed and reworked by the 55th Squadron armament section, under direct command of 2nd Lieut. William Eades, Air Reserve. The rack has since been flown to Wright Field by Lieut. Eades and demonstrated before the Equipment Branch of the Materiel Division, after which tests it was given an O.K. for use.

All racks in the 20th Pursuit Group are at present modified to allow for the new manner of take-off. The basic principle of the system is in having the catches on the rack itself changed to hold the target release. By doing this, the tow ship can be taken off with the rope doubled, cutting the length down to 300 feet and making for a quicker, safer take-off. After the ship is in the air, the first pull on the release handle drops both trailing end of tow rope and the first target. Thereafter, additional targets are released as needed in the prescribed manner. In all tests and in operations of the modified rack, the functioning has been almost 100% perfect.

Tests were also run in the 55th Squadron, using a 1500-foot tow rope in preparation for .50 caliber firing, but this proved unsatisfactory. Better results may be obtained with a type of tow ship other than the P-26A or when some form of reel for the tow rope is devised.

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Special orders of the War Department, recently issued, assign the following-named Air Corps officers to duty at the stations indicated upon the completion of their present tour of service in the Hawaiian Department, viz:

Lieut. Colonel John C. McDonnell to Barksdale Field, La.

First Lieuts. Donald D. Arnold and Kingston E. Tibbetts to Mitchel Field, N.Y.

First Lieut. James E. Briggs to Selfridge Field, Mich.

First Lieut. Robert E.L. Pirtle to Hamilton Field, Calif.

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Contribution of material for the News Letter from Wheeler and Mitchel Fields is solicited.

RETIREMENTS

April 30, 1937, marked the date of the termination of the active military service of two Army Air Corps pilots, Captains Cornelius J. Kenney and Mark R. Woodward, who were placed on the retired list for disability incident to the service.

Captain Kenney was born on November 12, 1897, at Brookline, Mass. He graduated in 1916 from the Mechanic Art High School of Boston, Mass. Enlisting on October 23, 1917, as a Private, 1st Class, Aviation Section, Signal Reserve Corps, he was called to active duty at the School of Military Aeronautics, Massachusetts Institute of Technology, Cambridge, Mass., on December 1, 1917. On January 7, 1918, he was transferred to the School of Military Aeronautics, Princeton University, from which he graduated February 23, 1918, and was then sent to Camp Dick, Dallas, Texas, for duty with a squadron. On March 13, 1918, he was transferred to Taliaferro Field, Hicks, Texas, for flying training, which he completed April 25, 1918. He was commissioned a 2nd Lieutenant, Aviation Section, Signal Reserve Corps, June 5, 1918, and assigned to active duty. On June 11th, he returned to Camp Dick for further flying training and instruction in aerial gunnery, and on July 25th he was transferred to Payne Field, West Point, Miss., for flying duty, embracing acrobatics, cross-country flying and formation flying.

On October 1, 1918, Captain Kenney was ordered to the Aviation Concentration Depot at Garden City, Long Island, N.Y., in preparation for overseas service, but with the Armistice being signed before he sailed, he was transferred on December 13, 1918, to Rockwell Field, San Diego, Calif., where he completed a course in aerial gunnery and Pursuit flying.

Transferred to Kelly Field, Texas, on July 22, 1919, he served at that station until February 17, 1922, in the capacities of Engineer Officer, 12th Aero Squadron, for 13 months, and then with the 96th Bombardment Squadron as Radio and Armament Officer, Adjutant, and Post Utilities Officer. From February 24, 1922, to April 22, 1922, he was stationed at Mitchel Field, L.I., New York, as Adjutant, 7th Air Park. He was then transferred to the Panama Canal Department, serving on the Isthmus for a period of three years in the capacities of Adjutant, 25th Bombardment Squadron, for 13 months; Assistant Post Communications Officer, 2 months; Engineer Officer, 24th Pursuit Squadron, 5 months, and Supply Officer, two years.

On May 1, 1925, Captain Kenney reported for duty at Post Field, Fort Sill, Okla., where he served as Supply Officer of the 44th Observation Squadron for five months; Engineer Officer for two years, and Operations Officer for Air Service troops for a similar period.

From June 21, 1927, to July 24, 1929, he served at March Field, Riverside, Calif., as Commanding Officer of the 24th Observation Squadron.

In July, 1929, Captain Kenney was assigned to duty in New York City as Executive Officer, Non-Divisional Units, Second Corps Area, a position he occupied, with subsequent changes of station to Governors Island, N.Y., and Mitchel Field, N.Y., to August 30, 1933, when he was transferred to the Air Corps Tactical School, Maxwell Field, Ala., for duty as student. Following his graduation in June, 1934, he was assigned to Selfridge Field, Mich., where he served as Supply Officer, 1st Pursuit Group Headquarters, and later as Commanding Officer of the 57th Service Squadron.

Captain Kenney was commissioned in the Air Service, Regular Army, as a second lieutenant, on July 1, 1920, and was promoted to 1st Lieutenant the same date, and to Captain, February 1, 1933. From April 20, 1935, to January 22, 1936, and from August 26, 1936, until recently, he held the temporary rank of Major.

Captain Mark R. Woodward, Air Corps, who since June, 1935, served as Commandant of Cadets and Director of Ground Training at the Advanced Flying School, Kelly Field, Texas, was born January 10, 1895, at Rosehill, Va. After graduating in 1914 from San Angelo, Texas, high school, he attended the University of Virginia for two years.

Enlisting as a Private, 1st Class, Aviation Section, Signal Enlisted Reserve Corps, in June, 1917, he received his ground school training at the Ohio State University and his flying training at Ellington Field, Houston, Texas. Passing the required tests for the rating of Reserve Military Aviator, he was, on April 20, 1918, commissioned a 2nd Lieutenant, Aviation Section, Signal Reserve Corps, and assigned to active duty at Ellington Field.

Following brief periods of service at Camp Dick and Love Field, both at Dallas, Texas, Captain Woodward was transferred, on June 1, 1918, to Payne Field, West Point, Miss., where he served as Personnel Adjutant, in addition to other duties, until February, 1919. For the next five months he was stationed at the Primary Flying School, Carlstrom Field, Arcadia, Fla., performing among various other duties those of Assistant Engineering Officer.

From June, 1919, to March, 1920, Captain Woodward was stationed at Mitchel

Field, L.I., New York, where he served as Personnel Adjutant of the post, also as Adjutant of the 15th Aero Squadron.

At Mather Field, Sacramento, Calif., to which Captain Woodward was assigned in March, 1920, he performed various duties at different times, including those of Adjutant of the 9th Aero Squadron, Personnel Adjutant of the post, Commanding Officer of the 28th Bombardment Squadron and Commanding Officer of the Air Service Supply Detachment. He participated as pilot in Forest Fire Patrol operations. From August, 1922, he served on a two-year tour of duty in the Philippines, being stationed at Clark Field in the capacity of adjutant. For three years thereafter, until June, 1927, he was on duty as Assistant Professor of Military Science and Tactics at the Massachusetts Institute of Technology, Cambridge, Mass.

Captain Woodward's next station assignment was at Aberdeen Proving Ground, Md., where he performed various duties, including those of Adjutant of the 49th Bombardment Squadron; Operations Officer, Engineering Officer and Acting Air Officer of the 3rd Corps Area.

Transferred in March, 1932, to Langley Field, Va., he served at this post in such capacities as Commanding Officer of the 2nd Bombardment Group Headquarters; Adjutant, 2nd Bombardment Group; and staff duties at post headquarters until his transfer to Kelly Field, Texas.

Captain Woodward was commissioned in the Air Service, Regular Army, on July 1, 1920. He was promoted to 1st Lieutenant on the same date, and to Captain, March 1, 1932. He held the temporary rank of Major from July 18, 1935, to January 25, 1937. He will make his home at Bergs Mill, Texas.

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ARMY DAY AT HAMILTON FIELD

During the first week in April, the 7th Bombardment Group, Hamilton Field, Calif., participated in quite a number of flights. Cooperating with civilian authorities, flights were made over San Francisco, Oakland, and several cities in the Bay Area. On April 6th, the Air Base was thrown open to the public in an "Open House" celebration and featuring exhibitions of formation flying, gunnery and bombing missions. On the ground were exhibits showing the great number of activities so necessary in maintaining a fighting unit.

The photographic laboratory of the 88th Reconnaissance Squadron set up a most attractive display and proved to be the center of attraction. A Martin B-10B was on display with all or most of its flying equipment. Ships of many types were much in evidence, one of which was the new Douglas B-18. This ship was the object of much discussion by the men of this Air Base, late reports indicating that this base will maintain several of these ships in the near future.

The celebration ended with quite the most thrilling events of the day. Parachute jumps featuring 1st Lieut. Carl A. Brandt, 2nd Lieut. James A. Philpott, Privates, 1st Class, Sam Goldbaum, Charley H. Chan and James R. Wright, made a grand finale to a perfect day.

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BOMBARDIER'S KIT

Experience in the 9th Bombardment Squadron has demonstrated the necessity of a bombardier's kit in order to facilitate the bombardier's problem by providing an orderly and efficient means of handling the numerous charts, the record sheets, and other equipment used in bombing.

A design was prepared by Lieut. J.E. Shuck, of the 9th Bombardment Squadron, Hamilton Field, Calif., and calls for a rectangular kit made of olive drab cotton duck material, approximately 10" x 15" x 1-3/4". On the front side of the kit there is a pocket with an elastic to sized to hold the altitude correction computer, a pocket to hold the tachometer, a pocket for two pencils, and a pocket for a small thumb tack board. The rear side of the kit has two celluloid windows with pocket backing made to hold bombing data charts.

The inside of the kit is divided into two sections, one to hold the plotting board and the other for spare plotting sheets. A flap, with a snap fastener, folds over the top of the kit closing the opening at the top. A carrying strap is provided with a snap on one side so as to provide a means of hanging the kit in the airplane.

The need for such a kit was recognized, and the design prepared by the 9th Squadron was so satisfactory that the Commanding Officer of the 7th Bombardment Group ordered sufficient kits to equip all squadrons of that Group.

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The 33rd Pursuit Squadron, Langley Field, Va., is keeping busy these trying days of 2nd Wing Field Exercises. "Interception missions, aerial and ground gunnery, cadet training and training of rear seat gunners leaves us very little time off," says the News Letter Correspondent, who adds: "The four cadets of the 33rd Squadron have been assigned as assistants to the various squadron jobs. The new pilots just finishing the Flying School are always eager and willing to cooperate and perform any job given them."

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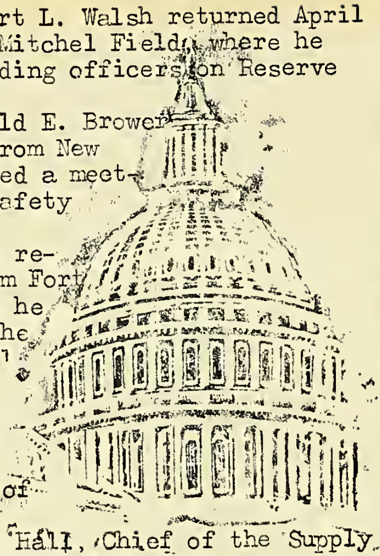
Upon the completion of his tour of duty in the Hawaiian Department, Lieut. Col. Hume Peabody, Air Corps, is ordered to Maxwell Field, Ala., for duty as a member of the Air Corps Board.

WASHINGTON OFFICE NOTES



Lieut. Colonel Robert L. Walsh returned April 17th from Boston and Mitchel Field, where he conferred with commanding officers on Reserve matters.

Lieut. Colonel Gerald E. Brower returned April 15th from New York, where he attended a meeting of the National Safety Council.

Major A.W. Marriner returned April 13th from Fort Monmouth, N.J., where he delivered a talk to the students of the Signal School.

Colonel Rush B. Lincoln and Major Wm. B. Souza departed on April 27th on leaves of absence.

Colonel Chalmers G. Hall, Chief of the Supply Division, returned April 24th from a cross-country trip to Buffalo, N.Y.

Officers from other stations who reported to the Chief's Office for temporary duty were Major Austin W. Martenstein, from Maxwell Field, on April 20th, and 1st Lieut. Hollingsworth F. Gregory, from Fort Sill, Okla., on April 23rd.

Colonel Frank D. Lackland, Chief of the Field Service Section, Materiel Division, Wright Field, Ohio, visited the office April 21st while on leave of absence.

Colonel Wm. C. McChord, Chief of the Training and Operations Division, left for Mitchel Field on April 22nd for a conference.

Majors Malcolm C. Grow and Lowell H. Smith returned from extended inspection trips.

Majors Arthur E. Easterbrook, Alfred W. Marriner and James A. Mollison left April 21st on an inspection trip.

Major Karl S. Axtater departed April 23rd on leave of absence.

Major Morton H. McKinnon left April 27th for temporary duty at Dayton, Ohio.

Captain James B. Jordan, Supply Division, returned April 15th from Chicago, where he visited the Procurement Planning Office.

First Lieut. George W. Hansen, Maxwell Field, Ala., visited the OCAC on April 22nd while on leave of absence.

Captain Pardoe Martin, in charge of Reserve activities at the Municipal Airport, Long Beach, Calif., and who not so long ago was on duty in the Personnel Division, OCAC, dropped in during the course of an extended navigation flight from the West Coast to confer on Reserve matters and to shake hands with old friends. He was accompanied by Captain Miller B. Towman, Air Reserve.

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WAR DEPARTMENT ORDERS

CHANGES OF STATION: To Langley Field, Va.: 1st Lieuts. John A. Feagin and John A. Samford from Panama Canal Department - 1st Lieut. Frank H. Robinson, upon completion present course of instruction, Air Corps Technical School, Chanute Field, Ill. (Previous orders amended) - Captain James M. Fitzmaurice from Kelly Field - Captains Darr H. Alkire, Carl B. McDaniel, 1st Lieut. Ivan M. Palmer, from Randolph Field, Texas - Major William C. Goldsborough (Captain), previous orders amended in his case - 1st Lieut. William H. McArthur, from Panama - 1st Lieut. Thomas L. Thurlow, from Wright Field.

To Selfridge Field, Mich.: Lieut. Colonel Laurence F. Stone (Major). Previous orders in his case amended. - Major Louis N. Eller (Captain) from Kelly Field.

To Office Chief of the Air Corps, Washington, D.C.: Major Ira C. Eaker, upon completion of present course of instruction at the Command and General Staff School, Fort Leavenworth, Kansas - Captain David G. Lingle, upon completion of present course of instruction at Air Corps Tactical School, Maxwell Field, Ala.

To Panama Canal Department: 1st Lieut. Edward H. Underhill and 2nd Lieut. William T. Hudnell, Jr., upon completion of present course of instruction at Air Corps Technical School, Chanute Field, Ill. - 1st Lieut. Morris J. Lee, from A.C. Technical School. - 1st Lieut. Robert K. Taylor, from A.C. Technical School.

To March Field, Calif.: Major Grandison Gardner (Captain) from duty as Instructor at A.C. Tactical School, Maxwell Field, Ala.

To the Philippine Department: Major Earle J. Carpenter (Captain) from Mitchel Field.

To Mitchel Field, N.Y.: Major Robert H. Finley, from Moffett Field, Calif.

To Randolph Field, Texas: 1st Lieut. Charles A. Clark, Jr., from Philippines.

To Hawaiian Department: 2nd Lieut. Wm. F. Frutchey, upon completion present course of instruction A.C. Technical School, Chanute Field, Ill.

To Wright Field, Dayton, O.: 1st Lieuts. Charles K. Moore and Edwin S. Parrin, students, upon completion of their present course of instruction, former at California Institute of Technology, Pasadena, and the latter at the University of Michigan.

The following-named Air Corps officers, upon completion of their present course of instruction at the Air Corps Tactical School, Maxwell Field, Ala., are assigned to stations as follows: Major Robert V. Ignico (Captain) to Mitchel Field; 1st Lieut. George McCoy, Jr., to Selfridge Field; Major William W. Welsh (Captain) to Maxwell Field; Major Frank D. Hackett (Captain) and 1st Lieut. Russell A. Wilson to March Field, Calif., and Captain David M. Schlatter to Fort Knox, Ky., for duty with the 12th Observation Squadron.

Upon the completion of their present course of instruction at the Air Corps Engineering School, Wright Field, Ohio, the following-named Air Corps officers are assigned to the Materiel Division for duty: Captains Raymond E. Culbertson, John G. Moore, 1st Lieuts. Eugene H. Beebe, Howard G. Bunker, Louis E. Massie and Herbert H. Tellman.

Major Harvey W. Prosser (Captain), Air Corps, now stationed in the Philippines, has been detailed with the Department of Commerce for one year in the Philippines in connection with the work of promoting civil aviation.

SCIENCE AND NATIONAL AIR DEFENSE

Address by General Oscar Westover, Chief of the Air Corps,
Before Greater New York Chapter of the National Aeronautic Association
Radio City, New York, April 23, 1937

WILLIAM Stanley Jevons, eminent English logician, once stated "Science teaches us to know, and an art to do, and all the more perfect sciences lead to the creation of corresponding useful arts." Thus has science entered into the development of the airplane as a weapon in National Defense until through the exhaustive research of our engineers the tools have been provided for the practice of the art of Air Defense. As rapid and amazing as this development has been, the life of the aeronautical scientist has not been what might be called a "bed of roses." Apropos of the trials and tribulations of the designers of military aircraft, also the rapidity with which aircraft design has changed, I will quote a poem by one of them entitled "An Engineer's Nightmare."

Home from his toil, an engineer
Sank wearily to bed;
The plans of wings and landing gears
Were buzzing through his head.

Then there appeared before his eyes
A dreadful apparition
Much like the ancient mariner
In very poor condition.

Who laid upon the bed a tome
Of 40 thousand pages.
"Specifications" it was marked,
And showed the wear of ages.

He frowned a military frown,
His eyes began to glisten,
And pointing with his horny hand
He throatily croaked, 'Listen!"

Design for us, O-Engineer,
An airplane that is hot;
A two-place Fighter's what we want,
The best that can be got.

Of course, you should be quite prepared,
Like any good go-getter,
To change it quickly to a bomber
If we decide that's better.

Now don't forget - it must be fast,
Three hundred's not enough;
But it must land at 20 miles
As light as downy fluff.

Remember, too, it must be dived
Or "Dove" - or is it "diven?"
No matter - it must go like Hell
Nor land the crew in Hivven.

A clean design, for speed's sweet sake,
That's a necessity.
The wings, of course, must fold, but please
Not unexpectedly.

The wings need flaps, the cowl does, too,
The ailerons must droop;
And seaplane floats would be right nice
For landing in the soup.

Since no one knows if this design
Will base on beach or boat,
Arrange to have the wheels retract
Into the seaplane float.

Put in some gas, enough to fly
From Hindoostan to here;
A crew of two - a radioo
And add Floatation gear.

A battery of ten-inch guns -
No wait - that's Battleships.
Oh, well, you'd better put them in;
We'll leave them out on trips.

The radio will be - let's see -
This one - no that one - wait,
Leave room for both - We'll pick one out
At some much later date.

That's all - except of course for bombs
And Cameras and Mappin',
Torpedoes, too, and smoke-screen tanks -
No telling what may happen.

Let's see - The last one was how strong?
Now multiply by three.
One never knows, does one, when one
Will strain it mightily.

Now hark ye well, 'tis writ in blood
That you'll be in a kittle
If you should deviate from specs
One single jot or tittle.

Each part must be well anodized,
Ten coats of paint you'll give it;
And bonding wire must connect
Each bolt and nut and rivet.

So there you are - Now go ahead
And dash off this design.
Ten weeks we'll give you - not enough?
We'll compromise on nine.

Because, you see, 'Twill take us years
To carefully peruse it
And fully satisfy ourselves
We simply cannot use it.

With few exceptions, every science enters either directly or indirectly into the fabrication or employment of this modern vehicle of defense and, in order that there may be continued improvement in the safety, efficiency, range, speed and capacity of aircraft, our national aviation policy should provide for the comprehensive planning and execution of long range programs of fundamental scientific research.

There are those who believe that science, by aiding in the development of such implements of war as the airplane, is promoting war. Such might be true in the case of an aggressor nation, but in this country which, simultaneously with its inception, adopted the policy of defense only, the more perfect our weapons are for defense the less apt we will be required to use them; so that science instead of promoting war actually holds the key to the ultimate solution of the problem of peace. It requires a long range view to believe that statement, for as we look around the world today we find many peoples, who by their enormous rearmament programs with especial emphasis on the airplane, indicate that they believe war is probable if not inevitable, and with the rapid extension of science and agencies of destruction, the possible extent, risk and result of such a war will probably be vastly greater than any ever experienced before. But those nations are aggressors which we are not, so who can say, under the condition of strained international relations existing today, that the efforts of our scientists should not be devoted to perfecting our instruments of defense to the point of impregnability and thus keep us out of such a war.

The next war, if and when it comes, will not be between armies but between peoples. Victory may not necessarily go to the strong but to the ingenious - the successful scientist. The decisive factor, due to the efforts of our scientists, may not be any one of those existing today but something as unexpected as were horses to the Aztecs or muskets to the Indians.

The same qualities which have made us successful in industry and commerce will give us the advantage in defense against an aggressor. Our resourcefulness may be even more effective than our resources. The result of any conflict in which we are forced to participate may depend more upon engineer and inventor than upon strategist or soldier. That Germany was able to hold out so long against encircling armies was due less to Hindenburg than to Haber, who discovered how to extract nitrogen for explosives from the air that drifted across No Man's Land.

So that we can rightly say that the development of our modern aircraft and its use in National Defense demands that the blood of the aviator be mingled with the grey matter of the scientist and the sweat of the brow of the man in the factories, mills, mines and fields of the nation.

With that thought in mind, we have adopted a national policy of fostering scientific experimentation in the aeronautical field in every possible way.

As stated before, practically all of the sciences enter into the fabrication and employment of the airplane in National Defense.

The Chemist and Metallurgist have made possible the materials without which our present day all-metal monoplanes would be impossible.

The aeronautical engineers have, by their designs, molded this material into perfectly streamlined craft that travel through the air at speeds not even dreamed of a few brief years ago.

Mechanical engineering genius, working hand in hand with the aeronautical engineer, has developed power plants, retractable landing gears, automatic controllable pitch propellers, the automatic pilot, de-icers, landing flaps, and innumerable instruments, gyroscopic and others, all of which not only add to the speeds obtainable but also make it possible for the pilot to vanquish that arch enemy of the aviator - weather. And this brings us to the meteorologist who, through his scientific research, has proven one of our humorists wrong when he said "Everybody talks about the weather but nobody does anything about it."

The uncertainty of the weather has in the past, probably more than any other one thing, caused more casualties and interfered with the scheduled operation of aircraft both military and commercial. Through years of study and research, the meteorologist has evolved what is known as the Air Mass Analysis Method of predicting weather. This has placed the forecasting of weather practically in the category with exact sciences.

With the advent of long range military and commercial aircraft, with their ability to traverse oceans as well as continents, the necessity for celestial navigation became apparent. Here astronomy, one of the oldest forms of science, enters the picture. Interwoven in the warp and woof of all these is the most exact science - mathematics.

The science of radio has now become an absolutely essential part of the operation and navigation of the airplane. The radio beacon and compass have given the airplane the characteristics of the homing pigeon. Radio is absolutely essential in the control of air traffic at all of our large air terminals.

Medical science, with all of its ramifications, enters very materially into the operation of aircraft. The selection of the necessarily physically perfect pilot personnel and the maintenance of this condition as well as the research to determine the effects of flying upon the physical and nervous condition of personnel is a function of aviation medicine.

The progress of aviation in the United States during the past twenty years, and more especially in recent years, is the envy of other progressive nations. American airplanes, engines and accessories are being sold in nearly all of the nations that use aircraft. More regularly scheduled passenger transport service is provided in the United States than in all the rest of the world combined, and more passengers are flown on American airlines than on all other airlines put together.

In the development of airplanes for Army and Navy purposes, excellent results have been achieved. Our military and naval airplanes designed to meet our service needs are not excelled. In general it may be said that the performance, efficiency, and safety of American airplanes - military, civil and commercial - are not merely abreast of foreign developments but in many cases are definitely superior. American leadership in aeronautical development is recognized abroad. This is evidenced by the purchase of American products sold in competition with foreign products, and also by the editorial comment of aeronautical authorities in leading European nations. "Imitation is the highest form of flattery." American developments have been and are being imitated abroad by many nations, including the Major European powers. Mr. C.G. Grey, editor of an English aeronautical magazine, when asked to comment on the last Paris Aviation Show, stated in effect - "I didn't know the Douglas airplane had so many illegitimate children."

When we consider the increasingly vital relationship of aircraft to National Defense, it becomes a matter of supreme concern to the Government of the United States that American aircraft excel that of any other nation. Recent feverish activities of European powers in increasing their air forces has been accompanied by great expansion of their scientific research facilities. This factor threatens seriously our present leadership and indicates the wisdom of continuing even more liberally than in the past the support of organized scientific research in aeronautics.

There are two principal agencies or groups of scientists in the United States engaged in original aeronautical research or in applying to aeronautics the product of the scientific research of the vast group of scientists in the industrial and commercial field. One of these is the National Advisory Committee for Aeronautics; the other is the Air Corps Materiel Division.

By an Act, approved March 3, 1915, the Congress of the United States established the National Advisory Committee for Aeronautics and charged it with the duty of supervising, directing and conducting scientific research and experimentation in aeronautics. The vision and wisdom of Congress in enacting that legislation and establishing the National Advisory Committee for Aeronautics as an independent scientific agency of the Government and giving it the functions, form of organization and freedom of action which it did, together with the continuous and far-sighted support of succeeding Congresses, has made possible the preeminent position of the United States in world aeronautics today. It did something for aeronautics, for the United States, and for the advancement of civilization which reflects credit on the Congress and gives us all cause to take pride.

Among the outstanding accomplishments of the human race is man's conquest of the air. It was in 1903 that the Wright Brothers made the first successful flight of an airplane at Kitty Hawk, N.C. Five years later, in 1908, the United States Government purchased its first airplane for the use of the Army and began the training of officers for military flying. During the years immediately preceding the World War, the Government and a meager aircraft industry had made important progress, but the Government, practically the only customer, had purchased less than 100 airplanes.

In the meantime, leading European nations, sensing more acutely the potentialities of aircraft in warfare, had made greater progress, and had begun laying the foundations for the new science of aeronautics; while America, the birthplace of aviation, was in the arms of Morpheus. The World War gave an impetus to the development of aeronautics, and within a few months after the war started, Congress, under the administration of our great war President, Woodrow Wilson, acted with commendable vision in recognizing that aeronautics was a new science about which the world knew but little and Americans less. Congress saw the need for providing a foundation for the advancement of this new science through an organization especially created to direct and conduct fundamental scientific research to develop the possibilities of aircraft, both for military and commercial purposes. Thus was the National Advisory Committee for Aeronautics brought into being. This organization, located at Washington and Langley Field, Va., has been provided with the finest aeronautical research laboratories in the world. It has developed new and unique research equipment and methods which enables its scientific staff to learn some amazing facts about the controlling effects of natural laws governing the flight of aircraft. For example, they can in a single flight, with an airplane especially equipped for flight research, accurately, automatically, and continuously record, from the moment the airplane begins to roll along the ground preparatory to take-off, until it lands, everything that happens, including: The force with which it strikes the ground on each bump as it rolls along in the take-off; the length of run and ground speed in the take-off; the position of the controls; the energy exerted by the pilot in the movement of the controls; the airspeed; the flight path of the airplane, including maneuvers such as the loop, barrel roll, the Immelman turn, the vertical dive, etc.; the engine revolutions per minute; the distribution of the load over the lifting surfaces, and the rapidity and extent of the increase of the load as the airplane goes through violent maneuvers; the accelerations on landing; and the length of run before coming to a stop. All this information is necessary to provide accurate design and safety factors for both military and commercial airplanes.

Let me attempt to illustrate what knowledge of the distribution of the load, for instance, means. Suppose a given airplane weighs 3,000 pounds and has 300 square feet of wing area or lifting surface. The average load would be 10 pounds per square foot, but even in steady flight the load is not evenly distributed. The front edge of the wing carries a great deal more of the load than does the trailing edge, and when the airplane is sharply pulled up from a dive, for instance, the load may build up to eight or ten or even twelve times the weight of the airplane, that is to say, that airplane structure in the act of pulling out of a dive may have to support not 3,000 pounds in the air, but eight or ten or twelve times 3,000 pounds. It is of great importance therefore to know what portions of the wings have to carry this great increase in load and how rapidly the load builds up, in order that the airplane structure may be designed to sustain the shock and carry the load with safety.

An airplane equipped for such research in flight is virtually a flying laboratory, but supporting it is a ground organization and a laboratory staff, and back of that is the membership of the Committee and of its technical sub-committees. The physical equipment of the ground organization comprises a number of wind tunnels, large and small, including the variable-density tunnel, for testing models in compressed air; the propeller research tunnel, for research on full size propellers; the full-scale tunnel - the largest in the world - for research on full size airplanes; the vertical wind tunnel, for studying and measuring the spinning characteristics of airplanes; the refrigerated wind tunnel for investigating the problem of ice formation in flight; the free-spinning wind tunnel for observing under controlled conditions the free spinning characteristics of airplane models in an ascending column of air; and a high-velocity jet-type tunnel for studying the design of propeller tips. In addition to the wind tunnels, there are an instrument laboratory, an engine research laboratory, a flight research laboratory, and a hydrodynamic laboratory. The latter, known as the N.A.C.A. tank, is a seaplane towing channel in which models of seaplane floats and of flying-boat hulls are investigated at water speeds up to the take-off speed of seaplanes.

The Committee's laboratories are known as the Langley Memorial Aeronautical Laboratory and, as stated, are located at Langley Field, Va., on land set aside for the Committee's use by the War Department. The problems comprising the research programs are approved by the main Committee upon request of the War, Navy, or Commerce Departments, upon recommendation of one of its technical subcommittees, or upon its own initiative. The main Committee is composed of fifteen members appointed by the President and serving as such without compensation. They comprise two representatives each of the War and Navy Departments, from the offices in charge of military and naval aeronautics; one representatuve each of the Smithsonian Institution, the U.S. Weather Bureau and the National Bureau of Standards; together with eight additional persons (including a representative of the Bureau of Air Commerce, Department of Commerce, who are "acquainted with the needs of aeronautical science, either civil or military, or skilled in aeronautical engineering or its allied sciences."

The law provides that the National Advisory Committee for Aeronautics shall "supervise and direct the scientific study of the problems of flight, with a view to their practical solution * * * "and also "direct and conduct research and experiment in aeronautics." Briefly, the general functions of this Committee may be stated as follows:

1. Coordinate the research needs of aviation, civil and military.
2. Prevent duplication in the field of aeronautical research.
3. Conduct under unified control of Committee in one central Government laboratory fundamental aeronautical research, including:
   (a) Confidential research for the Army and Navy on which they rely for supremacy of American military aviation.
   (b) Fundamental research to increase safety and economy of operation of aircraft, military and civil.
4. Advise War, Navy, and Commerce Departments and the aviation industry as to the latest research information.
5. Consider merits of aeronautical inventions submitted by the public to any agency of the government.
6. On request of the President, the Congress, or any executive department to advise upon any special problem in aeronautics which may be referred to it.

Through the personal contact of the heads of the War, Navy and Commerce air organizations serving as members of the National Advisory Committee, and of their chief technical subordinates serving as members of the technical subcommittees, there is effective coordination of the research needs of aviation, resulting in the preparation of research programs that eliminate duplication of effort. A major portion of the research program originates with requests for assistance from the Army and Navy. As a result of the representative character of this organization every desired cooperation is cheerfully given by the War, Navy and Commerce Departments. Usually the results of research are published promptly by the Committee and are made available to all concerned, but on request of either the Army or Navy in specific cases some of the most valuable discoveries of the Committee are kept confidential, at least until they first find application in new design of American aircraft.

The Army Air Corps and Bureau of Aeronautics, as well as the Bureau of Air Commerce and the aircraft industry, rely upon the National Advisory Committee for Aeronautics for the conduct of the fundamental scientific research that is necessary to enable them to keep at least abreast of European developments. The research results are usually applicable alike to military and to civil aviation. The work of the National Advisory Committee for Aeronautics has been so general and valuable that it is impossible today to design a modern efficient airplane without using the results of the Committee's researchers. The work of this organization is not only of great current value, but in time of war will become a vital factor. There is no way to measure the value of superior performance of aircraft in warfare, for aerial supremacy is quite likely ultimately to be decisive of a war; nor even in time of peace can a money estimate be placed on the savings in life and property due to improved safety in the operation of both military and civil aircraft.

The value in dollars and cents of improved efficiency in aircraft resulting from the research of the National Advisory Committee for Aeronautics can, however, be fairly estimated. The National Advisory Committee for Aeronautics is one governmental agency giving a splendid return to the taxpayers for the appropriations it receives, and in economic value is making possible annual savings in military and naval aviation alone in excess of its appropriations.

The remarkable record of improvement in the performance, efficiency, and safety of American aircraft during the past twenty years is largely the result of the continuous prosecution of organized fundamental research by the National Advisory Committee for Aeronautics. In this the scientific talent of America has been marshaled in a sustained effort to have the United States in the forefront of progressive nations in the development of aeronautics.

The factors most largely responsible for the great success of the National Advisory Committee for Aeronautics is its status as an independent Government establishment. In my opinion, it deserves the appreciation of this country for its concentration on the function assigned to it by law and for the great credit it has brought to the United States and to American aviation by its outstanding contributions to aeronautical progress, made possible by the truly patriotic and unselfish devotion to duty and service without compensation of its eminent membership. The membership includes not only the responsible governmental officials concerned with the technical improvement in aircraft, but also such outstanding aeronautical authorities as Orville Wright and others, all serving under the able chairmanship of that inspiring leader in aeronautical science, Dr. Joseph S. Ames.

The Air Corps Materiel Division, located at Wright Field, Dayton, Ohio, for purposes of experimental development, has the Aircraft Branch, Power Plant Branch, Materials Branch, Equipment Branch, and last but not least, insofar as the military airplane is concerned, is the Armament Branch.

The Aircraft Branch is divided into six major laboratories.

The Structures Development and Test Laboratory is charged with stress analysis of all aircraft submitted to the Air Corps, testing the structural strength of those purchased, and developing, through test and research, new methods of assembling aircraft structures. To this group the world owes the all-metal monocoque airplane, and through its efforts there is now being constructed the first sub-stratosphere airplane, complete, with supercharged cabin.

The Special Research and Test Laboratory is charged with the preparation of airplane design studies from which military characteristics are established, the preparation of specifications covering the airplane proper, the evaluation of the airplane proper submitted on competition to the Air Corps, and the correction of unsatisfactory design features after the airplane is in service.

This laboratory is constantly investigating new and novel designs and design details and developing standards wherever they apply. One of its primary functions is the development of projects of extremely experimental nature which are usually of secret status.

The Propeller Research and Test Laboratory passes upon the design, and conducts exhaustive tests to determine the characteristics of each type of propeller accepted by the Air Corps. In addition, it is continuously engaged in research and development of new types. The field of its endeavors has been greatly increased by the introduction of controllable and constant speed propellers and by the rapid rise in engine horsepower. This Laboratory conducts all the propeller tests for the Navy and Department of Commerce and is the prime source of propeller engineering data in the United States. It is at present engaged in the development of opposite rotating propellers on a single shaft, a project made necessary by the introduction of great horsepower in airplanes of short span.

The Aerodynamic Research and Test Laboratory is engaged in developing methods of calculating performance, predicting performance by means of the wind tunnels, and actually measuring the performance of an airplane in flight.

This laboratory has made many contributions to the theory of aerodynamics and to the technique of wind tunnel operation. Its latest development is the photographic method of measuring performance in landing and take-off. At present it is engaged in developing methods for measuring static thrust, ground friction, and net accelerating forces of actual airplanes as well as a method for measuring torque and thrust of an engine-propeller combination in actual flight. The Laboratory has contributed much to the establishment of criteria for aerodynamic shapes, such as control surfaces, fairings, fillets, and the like, and for this purpose operates two wind tunnels of 265 m.p.h. and 500 m.p.h. velocity, respectively.

The Accessory Design and Test Laboratory is charged with the development and test of wheels, brakes, tires and tubes, landing gear complete with retracting mechanism, skis, floats, hulls, and allied parts of the airplane. Wheels and brakes are constantly being tested in order to produce correct drum and brake lining combinations; and oleo legs and retracting mechanisms are tested for each type of airplane. This Laboratory is at present engaged in perfecting hydraulic and pneumatic mechanisms for use on aircraft, a new type to replace the streamlined type now in service, and a radically different type of landing gear designed for instrument landings and take-offs, otherwise known as the tricycle gear.

The Lighter-than-Air Unit is engaged in the development of Air Corps balloons and balloon accessories, and in the correction of design faults which develop in service. This unit is largely responsible for the TC-13 and is now projecting plans for the development of future Air Corps types.

The chief function of the Power Plant Branch is to keep the propeller turning. Without any lengthy discussion, we all know that when the propeller stops everything else stops. Years ago, in the days of iron men and wooden ships and poor engines, forced landings were frequent and, thanks to slow airplanes, a cow pasture usually sufficed. Today most cow pastures are not quite large enough for our high performance airplanes, especially if loaded. A proportionate increase in engine reliability now lessens the possibility of that awakening clatter, that sputter, that puff of smoke, that splatter of oil, followed by that awful silence as you start gliding down to a forced landing, or a jump if old terra firma under you does not look so good.

The Power Plant Branch has contributed its share to the development and research of modern engines and accessory gadgets. Its chief concern is to give to the service the best, the most reliable engine at the earliest possible date. It works in conjunction with the various manufacturers who produce the finished product for test. The test consists of running the engine at various speeds and power loadings with controlled temperatures and pressures, simulating standard sea level conditions and the various conditions at altitudes.

In the Power Plant Branch they must prove themselves capable of routine, day-to-day, continued military service. Does number so-and-so cylinder cool properly? Does such and such a bearing get sufficient oil? Are the clearances on such and such a part too large or too small? Why did the case crack after so many hours on the test stand? Why the excessive vibration at such and such an r.p.m.? And so on for hundreds of other minor troubles found in type tests of engines. It is best to find out all those troubles on the test stand rather than over the Alleghenies with ceiling zero.

The Power Plant Branch activities during the past fiscal year have been concentrated on increasing the power output of engines in service, development of new types of engines, improved fuels to permit greater power output and lower fuel consumption, an extension of supercharging to higher powers and altitudes, and the designing of an oil dilution system for cold weather starting. Considerable progress has been made in the development of engine accessories, such as vacuum pumps, long reach spark plugs, magnetos and shielding, engine-driven gear boxes for accessory drives, hydraulic fuel pump drives, fuel pressure regulators, automatic oil temperature control valves, automatic supercharger regulators, automatic mixture controls, fuel injectors and controls, and hydraulic engine controls, all for the benefit of those who fly. The general trend in engine improvement is to take as much responsibility as possible from the pilot's already crowded mind, by replacing the great mass of control handles and gadgets by fool-proof automatic controls, out of sight and, we hope, out of mind.

The Materials Branch combines the functions of a service organization and an experimental laboratory. In the former capacity, it does a large amount of testing in connection with the Procurement Program of the Air Corps and acts as a control laboratory by preparing specifications and developing and maintaining standards for the testing and inspection of material and processes at the contractors' plants. Experimental development may be divided into two categories, one which determines the applicability for aircraft construction of materials submitted by the Industry to the Materiel Division, and the other which requires the development of a new process or material in which the industry may not be interested on account of its limited application.

A wide variety of products is covered. Not only are the materials for the construction of airplanes, enginesand accessories constantly being improved, but there are hundreds of items used in connection with maintenance for which specifications must be prepared since no other Government agency is interested.

The probability that airplanes will fly at high altitudes has brought up many questions in connection with materials for this service. The properties must not change at the lower temperatures. Complete properties of all the structural material under static, impact, and vibration are being obtained in a room refrigerated to -50° F. The windows must withstand an internal pressure and it became necessary to obtain the physical properties of glass and glass substitutes. New resinous materials with the transparency of glass, but considerably stronger offer a solution to this problem.

In the field of materials, competition is very keen and new materials are constantly replacing the older ones. Each new material brings up fresh problems in connection with fabrication, protection from corrosion, as well as a study of its fundamental properties in tension, twisting and fatigue. To carry out this work requires laboratory equipment of high accuracy and a wide range of adaptability. The laboratory at Wright Field has facilities for determining the presence of the most minute amount of an element in a material by means of its spectrum, or can test to destruction full-size parts for airplanes which may carry a load of 600,000 pounds.

The Equipment Branch of the Engineering Section consists of six Laboratories, viz: Instrument and Navigation, Electrical, Parachute and Clothing, Aerial Photographic, Miscellaneous Equipment, Physiological Research.

There are approximately 500 items of ground and air equipment for which this Branch is responsible - research, development, and standardization.

The Instrument and Navigation Laboratory. A Douglas C-33 airplane for the conduct of experimental flight tests in connection with the various projects under development has recently been assigned to this laboratory. This airplane has been utilized in testing such devices as improved gyro octants, drift sights and signals, automatic pilots, and navigation computers of various types.

Among the interesting projects now under development is a tachometer that records engine running time. In addition to the pointer which indicates engine r.p.m., two small dials are provided, one to indicate accumulated engine time up to 500 hours, the other to indicate "trip" time. Only the latter counter can be reset from the face of the instrument.

A synchronous control for multi-engine installations has shown promise of early accomplishment. An experimental model of this device has been operating on bench tests and automatically synchronizes speeds much better than can be accomplished by manual control.

Instrument test equipment of a portable nature is nearing completion and it is anticipated the service activities will be supplied with this essential equipment in the near future.

Aircraft and ground lighting equipment are keeping pace with the requirements of advanced aircraft and the needs of the latest landing field installations. New equipment under development includes portable-by-air lighting equipment for landing fields.

Electrical development has been characterized by exploration into the field of alternating current for aircraft application. An experimental installation has been made during the present fiscal year.

Present parachute development is concerned with high-speed opening parachutes for use in the faster airplanes.

Aerial photography. A self-contained photographic laboratory automobile trailer unit has been developed having one room completely equipped for printing and one for film processing and print finishing. The Unit houses its own ventilating system, water supply, electric power plant, chemical and material supply, together with all photographic accessories necessary to produce complete mosaics wholly within the Unit.

One of the most interesting projects of the Physiological Research Laboratory is an investigation of the effect of centrifugal force on pilots. The equipment for this research consists of a long rotating arm with a seat belted to its outer end. Powered by a large electric motor, this arm is rotated at speeds up to 80 r.p.m., at which speed a force of twenty times the pull of gravity is developed. Members of the laboratory are acting as experimental subjects up to 8 "G's" and anesthetized experimental animals for the higher forces which may produce permanent or fatal injuries.

The Armament Branch is responsible for the development of all items of armament equipment necessary to the complete complement employed in military aircraft, with the exception of those furnished by other Supply Branches of the Army, in which cases the Armament Branch is responsible for the provision of correct installation and proper functioning.

Also located at the Materiel Division is the Aircraft Radio Laboratory. Recently the work of this laboratory has been concentrated on the development and application of radio in the Air Navigation field. Radio compasses and direction finders have been improved - a light weight direction finder or homing device has been developed for Pursuit airplanes. Tests of a loop wound around the engine cowl have given great promise. New instrument landing equipment has been developed and improved.

A radio range marker for indicating the position of radio range stations provides a more positive indication than the cone of silence and will operate the present type of marker beacon receptor.

Several interesting problems, such as the control of the direction of flight by means of a radio compass and an automatic pilot, and the automatic selection of frequency settings on the radio compass by the action of the marker beacon receptor have reached laboratory solutions, and with slight modifications in the present laboratory designs, should be ready for procurement shortly, if needed.

The foregoing developments indicate that it will be but a short time until all airplanes will be equipped with efficient and satisfactory radio equipment for all purposes.

Other interesting problems too numerous to mention here, including ultra high-frequency work, are being carried on or will be set up in the development program for the next few years.

So long as the development of aviation continues from year to year, the military and naval policies and programs of our national security and defense are necessarily subject to change, as they are largely dependent upon the probable use of aviation in future wars. So long as other nations are seriously engaged in the development of aviation, America must at least keep abreast of the progress of aviation abroad and never permit itself to fall behind.

It is only through the strong and healthy support of our agencies for scientific research and experimental development that the preeminent position of the United States in aeronautics can be maintained.

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HAWAIIAN STUDENTS VISIT LUKE FIELD

The 5th Composite Group, Luke Field, T.H., was again honored on April 9th by a visit of local R.O.T.C. students.

Fourteen cadet officers from Punahou School, accompanied by their instructor, Captain H.W. Barrick, Infantry, were met upon arrival at Luke Field and taken to the 23rd Bombardment Squadron hangar, where the different types of Bombardment airplanes were explained in detail, including a brief lecture on machine guns, bombs, bomb racks and radio equipment. The comments of Captain Barrick, Professor of Military Science and Tactics at Punahou School, will serve to illustrate the benefits of such visits:

"The visit to Luke Field made by the R.O.T.C. students from Punahou last Friday was a great success from their point of view.

They learned much and came away enthusiastic over flying. They were impressed by the thoroughness of the overhauling and inspections in the depot. The cost of airplanes, motors, etc., surprised them. It was extremely enlightening.

This, I feel, is valuable education for them and of benefit to the government; just now this cannot be determined definitely. However, in just a few short years some of these youngsters will be community leaders here and elsewhere. Their sympathy for the Army is established and the benefits they will bring to it eventually will be ample payment for the kindness shown them now.

We appreciate your kindness in permitting the visit. We wish to thank you, Major Melville, and the other officers for their kindnesses, courtesies and efforts in making it a pleasurable and profitable visit."

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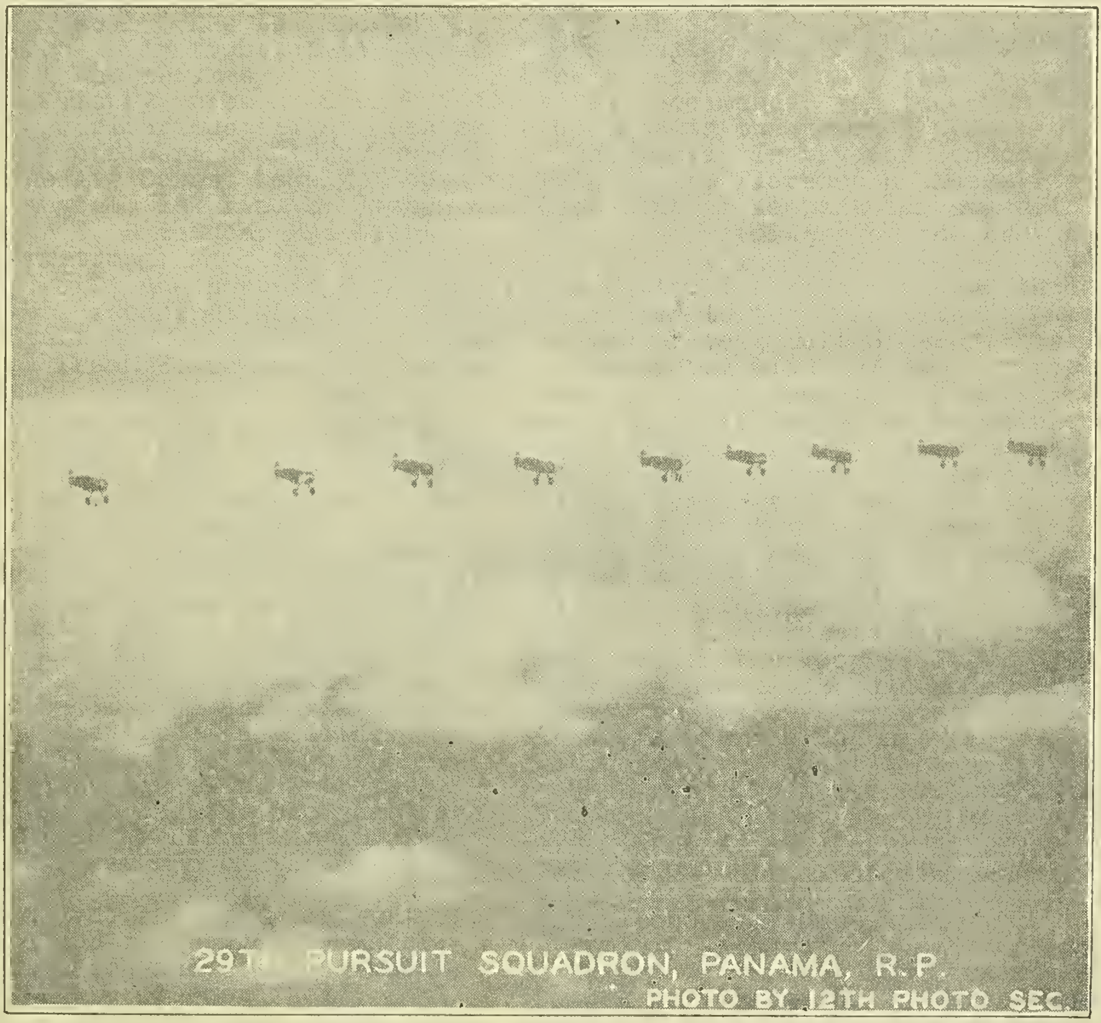
DISTINGUISHED FLYING CROSS AWARDED LANGLEY MEN

For their part in the rescue of seven Civilian Conservation Corps enrolees stranded on an ice flow in Cape Cod Bay last year, two officers and two noncommissioned officers of Langley Field, Va., were given citations for "extraordinary achievement" and presented Distinguished Flying Crosses during impressive ceremonies at the Langley Field Air Base on April 27th.

The recipients were Major Barney M. Giles, of the 20th Bombardment Squadron; 2nd Lieut. James H. Patrick, Jr., Air Reserve; Staff Sergeant Donald E. Hamilton and Corporal Frank B. Connor, both of the 96th Bombardment Squadron.

These four men on February 9, 1936, took off at night under dangerous flying conditions to aid seven C.C.C. enrolees stranded on an ice floe in Cape Cod Bay. They located the men, dropped a message to them, and were credited with being chiefly responsible for saving their lives. Major General Frank M. Andrews made the formal presentations during a formal review represented by officers, flying cadets and enlisted men of all GHQ Air Force units at Langley.

AIR CORPS
NEWS LETTER



29TH PURSUIT SQUADRON, PANAMA, R.P.

PHOTO BY 12TH PHOTO SEC.

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The chief purpose of this publication is to distribute information on aeronautics to the flying personnel in the Regular Army, Reserve Corps, National Guard, and others connected with aviation.

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PRESENTATION OF AVIATION AWARDS

UNDER dull gray skies on Saturday morning, May 8, 1937, the annual presentation of two of the Air Corps' highest awards was made to the most deserving personnel. In an impressive ceremony, General Malin Craig, Chief of Staff of the Army and Acting Secretary of War, presented the Mackay Trophy and the Cheney Award, while about four hundred of Bolling Field's troops looked on. The Army Band played incidental music and marches for the troops, who were lined up in front of ten airplanes during the ceremony.

The Mackay Trophy, presented each year for the most meritorious flight, was received by six officers and three enlisted men of the Air Corps, namely, Captain Richard E. Nugent, 1st Lieuts. Joseph A. Miller, Edwin G. Simenson, 2nd Lieut. Burton W. Armstrong, 2nd Lieuts. William P. Ragsdale, Jr., and Herbert Morgan, Jr., (Air Reserve), Technical Sergeant Gilbert W. Olson, Staff Sergeant Howard M. Miller and Corporal Frank B. Connor, Air Mechanic, 2nd Class. All of these men who share in the possession of this Trophy flew from Langley Field to Bolling Field, although the skies were threatening rain, and arrived in B-10 Bombers just a few minutes before the presentation.

The Cheney Award, donated by relatives of the late Lieut. William H. Cheney, Air Service, who was killed in an airplane crash at Foggia, Italy, in 1918, is presented annually for an outstanding act of valor, or of extreme fortitude or self-sacrifice in a humanitarian interest, not necessarily of a military nature, but which shall have been performed in connection with aircraft. Those eligible to receive the award are officers of the Air Corps and Air Reserve and enlisted men of the Air Corps and Air Reserve and, in the event of a posthumous award, the widow or next of kin. This Award was shared by Major Frederick D. Lynch and Staff Sergeant Joseph L. Murray, of Post Field, Fort Sill, Okla., for their daring rescue of the crew of a burning balloon near Fort Sill, Oklahoma, in July, 1936.

The donors of the Cheney Award, Mrs. Mary L. Scofield, of Peterboro, N.H., and Mrs. Thomas W. (Ruth Cheney) Streeter, of Morristown, N.J., mother and sister, respectively, of the late Lieut. Cheney, jointly set aside a trust fund of $15,000, the interest accruing therefrom to be used to make the award. In addition, a bronze plaque is struck off yearly, the name of the recipient or recipients engraved thereon, and the memento is presented together with an engraved certificate describing the act of valor performed, and either a sum of money or a suitable gift, as designated by the Cheney Award Board. Although the income from the trust fund exceeds $500 per annum, the balance is placed in a sinking fund for possible use in the event more than a single individual is recommended for the award, as is the case in the present award.

The Mackay Trophy was tendered in 1912 by Mr. Clarence H. Mackay to the Aero Club of America for award to the officer or officers of the Army making the most meritorious flight of the year. The National Aeronautic Association, successor to the Aero Club of America, is the present custodian of this Trophy.

Associated with the Mackay Trophy are most of the noteworthy flights performed by the Air Corps, among which may be mentioned the first non-stop flight across the American continent, the flight around the world and the flight around South America. Since 1912, the Mackay Trophy has been awarded annually by the War Department for meritorious flights, with the exception of the year 1917. In addition to having his name engraved on the Trophy, Capt.Nugent receives a beautiful gold medal from the donor, on the obverse side of which is an engraving bearing his name and the designation of the flight achievement.

What was considered by the Mackay Trophy Award Board as the most meritorious flight by Air Corps personnel during the calendar year 1936 was one which took place on August 13, 1936, during the Second Army Maneuvers.

Captain Richard E. Nugent, commanding a flight of three B-10B Bombardment airplanes participating in these maneuvers, took off from Langley Field, Va., in the face of adverse weather conditions and led his flight to Allegan, Michigan, slightly over 600 miles distant, and made a simulated attack on anti-aircraft installations at 10:00 p.m. Within a short time, dense haze and solid overcast were encountered, followed by thunder storms and heavy fog. The lead ship flew by instruments for more than 500 miles. In one area of the dense fog, the pilots of the wing ships, although in tight formation, were unable to see the navigation lights of the lead ship. They were then ordered to fly individually on a prescribed compass course and to reassemble in formation at a designated point on the line of flight. Each pilot brought his airplane to the appointed place, but the haze was so dense that even the landing lights of the airplanes were invisible beyond a few hundred yards, and the assembly was effected only after circling for fifteen minutes in imminent danger of collision. Captain Nugent then led his flight toward the objective, and on his order the Bombers glided out of the clouds over the target and delivered the attack at 9:58 p.m. The flight then proceeded through heavy rain storms to Selfridge Field, Mich.

Major Lynch and Sergeant Murray, recepients of the Cheney Award, were in a free balloon which took off from Fort Sill, Oklahoma, at 9:40 a.m., July 10, 1936. Major Lynch was a passenger in the balloon, which was piloted by Sergeant Murray. Master Sergeant Ralph J. Rumpel was assistant pilot and Staff Sergeant Douglas M. Tucker was the fourth occupant of the balloon. The aeronauts had been in the air about three hours and 35 minutes and were traveling north, rapidly approaching the South Canadian River. Sergeant Murray decided not to cross the river, there being very few bridges and the truck following them would have difficulty in finding them. He was preparing to land on a clear space he had observed from a high altitude, and, after indicating his intentions to the men in the truck, he explained to his passengers and aide what he planned to do. The country at this particular place is very rough, and most of the hills are covered with scrub timber.

As they were flying over a valley between two hills, the balloon started to descend rapidly. Sergeant Murray immediately dropped all the ballast he thought he could afford and believed sufficient to raise the balloon over the next hill. He had used much ballast during the course of the flight in attempting to maintain the altitude decided upon before starting the flight. As the balloon approached the top of this hill, it again descended and hit the ground very hard. More ballast was released, and the balloon was raised enough to clear the trees, and it started traveling north along the ridge of the hill. The ballast was nearly gone by this time and what was left was barely sufficient to make a landing.

The balloon was oscillating badly at this time, but no one was alarmed and Sergeant Murray felt confident he could make a safe landing in a small clearing immediately ahead. Approaching this clearing, he started to valve the gas, and the balloon with basket oscillating, descended slowly toward the ground. Immediately before hitting the ground, the basket seemed to stick in the underbrush.

Warning all members of the flight to remain in the basket, the pilot, with another member of the flight, pulled the ripcord to release gas from the balloon. There was an explosion at that time and the basket turned over. It was only a matter of seconds before the entire area was a mass of flames. Major Lynch was thrown clear of the basket by the explosion. Sergeant Murray was caught in the rigging by his parachute.

Major Lynch, with utter disregard for his own safety and despite the fact that he was suffering from burns, bruises and shock, returned to the balloon basket, plunged into the wreckage, where the heat from the burning balloon and hydrogen gas was most intense, and dragged Sergeant Murray from the burning basket. Then they both ran to Sergeant Tucker, who was rolling on the ground and whose clothing and chute were on fire. They attempted to put out the fire and cut his clothes from him.

By this time several natives arrived on the scene. One of them suggested throwing dirt on Sergeant Tucker, which was done. Then Sergeant Murray lost consciousness and was placed under a nearby tree. One of the natives assisted Major Lynch in finishing the job of cutting the clothing from Sergeant Tucker. He then issued instructions to get Sergeant Rumpel out of the fire if that was possible. When the latter was removed from the ruins of the balloon he was dead. Both Sergeants Murray and Tucker were severely burned, and were taken to a hospital at Anadarko, Oklahoma. Sergeant Tucker subsequently died as the result of his injuries.

Informed by the Secretary of War of the decision of the Mackay Trophy Award Board with respect to the winners of this Trophy for 1936, the donor, Mr. Clarence H. Mackay, stated in reply:

" * * * The flight of Captain Nugent's ships over a distance of 600 miles in adverse weather that made it necessary to navigate by instrument almost the whole distance, and their landing at their destination within two minutes of the prearranged time was a remarkable performance, most deserving of the Trophy award for 1936. The progress of aviation in the last twenty years has been truly amazing. * * * "

Colonel Walter R. Weaver, Commanding Officer of Langley Field, who initiated the recommendation for the award of the Mackay Trophy to the men above mentioned, stated:

"It is believed that for expert instrument flying and navigation, and the will to overcome obstacles and hit the objective, this flight was outstanding."

DATE SET FOR ADVANCED FLYING SCHOOL GRADUATING CLASS

It is expected that the present class at the Air Corps Advanced Flying School, Kelly Field, Texas, will be graduated on June 9th. This will be the first class since February, 1934, that will be commissioned in the Air Corps Reserve and ordered to active duty. Since 1934, the Flying Cadets have been detailed to duty with tactical units under their cadet status. At the present time there are 52 Flying Cadets in training with the current class. After their graduation they will remain at the Training Center until June 30th, at which time they will be discharged. They will then be appointed on that date as second lieutenants in the Air Reserve and ordered to active duty on July 1, 1937, as Airplane Pilots. The cadets graduating from the Observation Section of the Advanced Flying School will receive the additional rating of Airplane Observer.

To the extent that appropriations are available, they will serve three years' continuous active duty as Reserve officers. They will then either be returned to inactive duty status or continued on active duty, with their consent, for an additional two years. Such Air Corps Reserve officers who have completed three years of continuous active duty and who are otherwise qualified and are recommended for the extension of two years' further duty, will be promoted to the rank of 1st Lieutenant, Air Reserve. While on active duty as Reserve Officers, they have the privileges, pay and allowances of a Regular Army officer of the same rank in the Air Corps. At the conclusion of three years' continuous active duty as a Reserve officer, these Air Corps Reserves are entitled to a lump sum of $500., which shall be in addition to any pay and allowances which they may otherwise be entitled to, and which will be paid them only when they are returned to inactive duty status. This additional service will prove invaluable to those Reserve officers who contemplate taking the competitive examination held from time to time for appointment in the Regular Army as second lieutenant.

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THE MANEUVERS AT ROCKY MOUNT, N.C.

The Second Bombardment Group was stationed at Rocky Mount, N.C., for the 1937 Second Wing Field Exercises. For two weeks prior to the move to Rocky Mount on Monday, April 12th, extensive preparations were being made. Field kits were dusted off and jammed full of supplies. Trucks were loaded, so that, bright and early on the morning of the 12th the long snake-like truck train squirmed on its 150-mile trek to the new base. The planes were also loaded and made a round trip in the morning. At 1:30 p.m., the Group left Langley Field as a unit and landed at Rocky Mount at 2:30 p.m. The convoy arrived at about the same time, and the rest of the afternoon was spent in getting tents set up and beds made before dark.

A small crew from the 1st Air Base preceded the main contingent by two days and had contracted for the construction of a kitchen, water lines and power for lights. During the first night in the new camp, without any heating equipment set up, the temperature dropped to an all time low as far as the Group personnel were concerned. Remarks were heard around the camp the next morning that flying clothes made pretty fair pajamas. It warmed up the next day, however and continued to remain so.

The encampment comprised Headquarters, Operations, Engineering, Radio and Metro tents on the auxiliary airdrome, and the camp proper among the trees in Battle Park, about one-half mile from the airport. The war was on - orders from the Wing being received via teletype, radio and the daily mail plane. The Second Group was ready!

For two weeks prior to April 12th, the personnel of the 49th Bombardment Squadron were busily engaged with preparations for the two weeks of field exercises at Rocky Mount, N.C. First Lieut. C.E. LeMay was Squadron and Flight Commander. The airplane commanders of the Squadron's four B-10B's were Lieut. LeMay, 2nd Lieuts. J.L. Templeton, C.J. Cochrane and K.H. Gibson. Each plane was fully equipped as a combat unit and manned by a pilot, bomber-gunner, radio operator-gunner and a navigator-gunner. They operated as one squadron of the 2nd Bombardment Group, commanded by Lieut. Colonel Robert Olds, during these exercises.

The 96th Bombardment Squadron, with 9 officers and 62 men, moved to Rocky Mount, N.C., on April 12th. Camp was established and everything made ready for the two weeks of field maneuvers. Preparations were completed that afternoon.

"Rocky Mount hospitality is the true, unexcelled, typical Southern welcome," reports the News Letter Correspondent, and he adds: "Parties have been held and are on schedule; the golf course is open to Air Corps personnel; a big league baseball game was enjoyed by all Air Corps fans, and many other acts of courtesy have been shown by the 'Rocky Mountaineers.' We are all looking forward to our second week in camp."

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INTERNATIONAL GAS MODEL ASSOCIATION

The Commanding Officer of the Air Corps Advanced Flying School, Kelly Field, Texas, witnessed a demonstration of exhibition flights of gas model airplanes at the field on Sunday, May 2nd. The demonstration was held so as to afford Colonel Krogstad first-hand knowledge as to the nature of the exhibition the Association would like to hold at Kelly Field on June 6th. If Colonel Krogstad gives his approval to the request of the Association, the State Meet will be held at Kelly Field on that date, at which time it is expected that 30 or 35 miniature airplanes will be entered in the contest. On May 2nd, ten models were flown. One flew to 500 feet altitude and circled the field for ten minutes. Approximately 200 people witnessed the flights.

Private W. M. Hewgley, 12th Air Base Squadron, Kelly Field, built an 8-foot model, the officers of Kelly Field donating the purchase price of the motor.

Mr. Robert Sedwick, son of Dr. W.A. Sedwick, of San Antonio, is President of the local club.

Captain Clyde K. Rich, Assistant Engineering Officer of the 12th Air Base Squadron, and Staff Sergeant J.N. Llewellyn, of that Squadron, supervised the meet on May 2nd which was held in front of the "Visiting Pilots' Hangar."

Another meet was scheduled for May 9th.

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VISITING SHIPS AT ROCKWELL AIR DEPOT

During the month of April, there were 100 visiting ships at the Rockwell Air Depot, Coronado, Calif. Most of the ships were from March and Hamilton Fields, Calif., as the A-17's and B-10's are having checks made before the big war games which were scheduled to be in full swing on May 1st.

Other airplanes came from the Middletown Air Depot, Penna.; Fairfield Air Depot, Ohio; San Antonio Air Depot, Texas; Wright Field, Ohio; Salt Lake City, Utah; Washington, D.C.; Fort Lewish, Wash.; Long Beach and Griffith Park, Calif.

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Staff Sergeants of the Air Corps who were recently promoted to the grade of Technical Sergeant were Walter H. Campbell, Chanute Field, Ill., on April 19, 1937, and Thomas F. Toohey, of Hamilton Field, Calif., on May 1, 1937.

FIELD EXERCISES IN THE PHILIPPINES

Air Corps organizations stationed in the Philippines recently participated in field exercises for a period of two weeks, and which proved very successful. The Third Pursuit Squadron of Clark Field, P.I., together with the Fourth Composite Group Headquarters of Nichols Field, were based at Del Carmen on the fine field maintained by the Pampanga Sugar Mills. The 2nd Observation and the 28th Bombardment Squadrons, of Nichols Field, were based at Sugar Centrales on Luzon. All concerned were very enthusiastic over the success of the various problems and missions flown.

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AN ECHO FROM THE VIRGINIA BEACH CAMP

"We have always conceded that there is no branch of endeavor in which the 36th does not have at least one representative who excells," says the News Letter Correspondent of that Pursuit outfit which makes its home at Langley Field, "but it took the alertness of Lieut. Glenn Thompson, during the recent Wing Field Exercises, to discover that hidden away in our midst is the greatest of all Sibley Tent Stove arrangers. Soliciting the aid of this talented soldier, Lieut. Thompson soon had his stove arranged to perfection. As the cold, damp night air settled down, the Lieutenant and his tent mate lit and banked the fire and settled down to a little reading while the masterpiece permeated the tent with warmth. But apparently, they belittled the ability of our master stove arranger, for so efficiently did the arrangement function that soon it was engulfing the whole camp with heat, as the poles, tent walls, clothes and other paraphernalia went up in flames, while Lieut. Thompson's clothes budget went down into the red. He and the other tent occupant admitted that at their expense there had been a hot time in the old camp site, and were ushered to their new tent, sans stove, sans clothes and sans humor.

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TEXAS STUDENTS VISIT SAN ANTONIO DEPOT

A group of about forty advanced students of the School of Business Administration, University of Texas, Austin, in charge of Dr. Chester F. Lay, Professor of Accounting and Management, on a visit to the large business establishments in San Antonio for a first-hand study of business methods, made a tour through the San Antonio Air Depot on May 3rd and evinced great interest in observing business methods as applied to the conduct of operations of the Depot.

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STUDENT MAINTENANCE NAVIGATION FLIGHT

As the last student maintenance navigation flight of the graduating class of the Air Corps Advanced Flying School, Kelly Field (which visited various universities throughout Alabama, Georgia and Louisiana) was a success, the same idea is being continued with the present class. Major R.D. Knapp, Director of Flying, and Captain R.E. Holmes have just returned from a survey flight through Oklahoma, Kansas, Missouri and Arkansas, on which tentative arrangements were made.

The plan for which authority has been requested is as follows:

Major R.D. Knapp to be in command of the flight.

Other personnel to consist of 16 flying instructors, 11 student officers, 52 flying cadets and 20 enlisted mechanics.

The flight plans to leave Kelly Field on Monday, May 17th, with itinerary as follows:

1st day: All airplanes to Oklahoma City, Oklahoma, and visit the University of Oklahoma at Norman, Oklahoma, which is nearby.

2nd day: The attack airplanes to Lawrence, Kansas, to visit the University of Kansas.

The Bombardment and Observation type airplanes to Stillwater, Oklahoma, to visit Oklahoma A. & M. College.

The Pursuit type airplanes to Columbia, Missouri, to visit the University of Missouri.

3rd Day: All airplanes to Fayetteville, Arkansas, to visit the University of Arkansas. The Bombardment and Observation airplanes to stop en route for a visit and lunch at the Oklahoma Military Academy, Claremore, Oklahoma. There airplanes will land at Will Rogers Airport at Claremore, which was named in his honor - as Claremore, Oklahoma, was his birthplace.

4th Day: All airplanes return to Kelly Field.

The students in the Attack Section are the only ones scheduled to fly Keystone Bombers, as there are only sufficient A-12's for half of the Section. The Observation and Pursuit Sections expect to have sufficient of their type of planes in commission to accommodate all their students.

Major Knapp and Capt. Holmes reported a warm reception on their survey flight, so everyone is anxious to make this flight.

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TARLETON COLLEGE STUDENTS GUESTS AT KELLY FIELD

The Air Corps Advanced Flying School, Kelly Field, Texas, played host to the band and drill company of the John Tarleton Agricultural College, of Tarleton Station, Texas, during their stay in San Antonio for the Fiesta. The students arrived at Kelly Field on Wednesday, April 21st, by bus from Tarleton, and were in charge of Major James D. Bender, Infantry, who is Professor of Military Science and Tactics at the College. The drill company was the Honorary Drill Company of Tarleton College, a "crack" drill unit of the ROTC. They came to San Antonio to take part in the competition of school military organizations. There were 78 cadets, and they staged an exhibition drill for the post personnel of Kelly Field and their friends on Thursday morning in front of Post Operations Office. The members of the Tarleton Band gave a concert at the same time, playing for an hour for the impromptu audience. There were 56 members of the band, not to mention the sponsor, who was dressed in the colors of the college - white dress and long purple cape.

Major James D. Bender, Professor of Military Science and Tactics at the John Tarleton Agricultural College, on April 29th, wrote the following letter to Colonel Arnold N. Krogstad, Commanding Officer of Kelly Field, Texas:

"Please allow me to express the thanks of the John Tarleton Cadet Corps, as well as myself, for the splendid hospitality which was accorded this Corps during our stay at your Post.

The Cadets themselves request that their thanks be not only extended to you, and through you, to the officer personnel, but to the enlisted personnel as well. They are unanimous in their comments, 'That they have never been treated so splendidly before in their lives.' They have nothing but the highest praise for both the officer and enlisted personnel of your Post, and are greatly enthused over the possibilities of becoming Flying Cadets."

John Tarleton College was endowed in 1899 by John Tarleton, an early pioneer of West Texas. Although the eccentric old gentleman never attended school a day in his life, it was his ambition to establish a college where poor boys and girls could obtain a higher education. As a result of this life-long ambition, he spent his entire life living with only the barest of necessities of life, in order that he might save his money. In 1918, the State of Texas made John Tarleton College a State institution, with a junior college rating, under the supervision of the Board of Directors

(Continued on Page 6.).

LAWMAKERS VISIT LANGLEY FIELD
By Lieut. Beirne Lay, Jr., Air Res.

Vice President John N. Garner and Mrs. Garner, along with 32 senators and 74 representatives and their wives, and other government officials, were in a visiting delegation here at Langley Field, Va., on Saturday, April 24th.

In the party were Senators Truman, Byrd, Bilbo, Bailey, Walsh, Schwartz, Davis, Green, McKellar, McCarron, Bone, Bridges, Johnson of California, Pepper, Smith, Thomas, Robinson, Lundeen, Lee, Caraway, Austin, Hitchcock, Russell, Andrews, McGill, Durry, Burke, Hayden, Thomas of Utah, and Representatives McMillan, Umstead, Thomason, Harter, Short, Arends, Drewery, Kniffen, Millard, Church, Collins, Hamilton, Bland, Welch, Kennedy, Crosby, Culkin, Ramspeck, Thom, Warren, Colden, Tarver, Johnson, Crowe, O'Leary, Sirovich, Snell, Scoot, Brook, Rutherford, O'Connell, Bates, Anderson, Boland, Daly, Carter, Dirkson, Clason, Schaefer, Harrington, J.G. Dorsey, May, Greenwood, Plumbley, Fitzpatrick, Merritt, Mott, Flanagan, Rabaut, Peterson, Sefer, Dockweiler, Power, Oliver, Scrugham, Mahon, Shannon, Houston, J.J. Smith, Sutphin, Hill, Woodrum, O'Neill, Burch, Costello and Boehne, and Delegate King.

The party left Washington Friday night, April 23rd, and arrived at Old Point Comfort Saturday morning, and was greeted by Brigadier General John W. Gulick, commanding the Third Coast Artillery District, who provided a guard of honor.

After visiting Fort Monroe, they were escorted to Langley Field, where upon their arrival they found planes already in formation on the field for the start of maneuvers that were to give the members of the party a first-hand view of some of Uncle Sam's most modern fighting craft in action.

The first maneuver staged for the visitors presented 18 PB-2 Pursuit planes of the 27th Pursuit Squadron, Selfridge Field, and 8th Pursuit Group of Langley Field, in command of Lieut. Colonel A.H. Gilkeson. Machine gun firing with tracer bullets at ground targets, for long and short range, resulted in a number of "good hits," the target catching fire. The use of tracer bullets, which could be seen in the air, gave the crowd one of its biggest thrills. Later the same planes participated in a "rat race."

Nine planes of the 9th Bombardment Group of Mitchel Field, N.Y., in command of Major Samuel Connell, dropped nine 100-lb. bombs. A like number of planes from the 2nd Bombardment Group of Langley Field, under the command of Lieut. Col. Robert Olds, performed a similar exercise, flying in 3-ship flights.

Eighteen bombs were released simultaneously from a B-17 (Flying Fortress) plane. The marksmanship was impressive, in spite of the necessity of bombing [illegible] below a bumpy 1,600-foot ceiling.

What was described by Langley Field officers as an "excellent" smoke screen was laid within a range of about 50 yards of the spectators along the entire length of the hangar line by seven A-17 planes of the 37th Attack Squadron in command of Captain Ned Schramm.

A visit to the Wind Tunnel of the National Advisory Committee for Aeronautics concluded the Langley Field inspection and preceded a luncheon at the Officers' Club.

Vice President Garner had very little to say, but seemed to enjoy the visit. The other members of the delegation seemed well pleased in the reception, also the exercises.

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LOTS OF ACTIVITY IN 33RD PURSUIT SQDN.

The 33rd Pursuit Squadron is a pretty busy outfit these days. It participated in two maneuvers in one month. On April 23rd, it returned to Langley Field, Va., from Virginia Beach, where it was encamped for a period of twelve days and participated in the 2nd Wing Concentration. Immediately on its return, all personnel set to work feverishly getting six PB-2A airplanes in readiness for the trip to the West Coast, where they were scheduled to be attached to the 27th Pursuit Squadron, GHQ Air Force, at Muroc Lake, Calif., until approximately May 31st. The following personnel were designated to participate in the West Coast Maneuvers: 1st Lieut. J.A. Bulger, 2nd Lieuts. R.C. Weller, J.D. Lee, W.R. Robertson, Jr., Flying Cadet J.L. Bledsoe, Staff Sergeants H. Turner, A. Bailey, G.S. Saltzgever, J.H. McCraw, H.J. Beck, Privates, 1st Cl. H.J. Nycum, A.B. Scott and Private R.S. Deel.

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The John Tarleton College
(Continued from Page 5)

of Texas A. & M. College. Since that time the College has continued to grow until at present it has an enrollment of 1154 students and is the sixth largest State institution in Texas. It is co-educational and offers a varied curriculum, including Home Economics, Engineering, Agriculture, Business Administration, Music, and Social Sciences. Tarleton College has long been distinguished for its "crack" ROTC unit and its military band. It has the reputation of being the most economical college in the State of Texas.

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During the month of March, 1937, the two C-27's and one C-33 at the Rockwell Air Depot, Coronado, Calif., flew 118:50 hours, during the course of which they covered a total of 13,829 miles and carried 119,137 pounds of freight on scheduled trips.

THE SELECTION AND TRAINING OF FLYING CADETS

In presenting the above subject, it might be well first to outline briefly the designation, composition and object of the Government agencies established and operated to serve this purpose.

The Army Air Corps has in the vicinity of San Antonio a military establishment officially designated as the Air Corps Training Center, which consists of:

(a) Headquarters, the Air Corps Training Center, located at Randolph Field, Texas.

(b) The Air Corps Primary Flying School located at Randolph Field.

(c) The Air Corps Advanced Flying School located at Kelly Field.

(d) The School of Aviation Medicine located at Randolph Field.

The School of Aviation Medicine, although a part of the Training Center, is not involved in the training of Air Corps personnel, but is operated for the purpose of giving to the Regular, Reserve and National Guard medical officers specialized training in aviation medicine to qualify them as flight surgeons, also to conduct research and investigation with a view of improving the selection and conservation of flying personnel. No further reference will be made to the School of Aviation Medicine in this discussion since, as has been stated, it is not involved in the training of Air Corps personnel.

The objects of the Air Corps Training Center are to instruct and train students, who are assigned by competent authority, as airplane pilots to a degree of proficiency which will qualify them to perform military maneuvers with tactical organizations of the Air Corps and which will give them a foundation such as will enable them to qualify for duties of a junior officer of the Air Corps; also to qualify students taking the observation pilot course as Airplane Observers.

Upon graduation from the Air Corps Training Center, the student is awarded his diploma, his wings and, beginning with the class graduating in June, 1937, his commission as a 2nd Lieutenant, Air Corps Reserve. Recent legislation authorizes the President to call to active duty, with their consent, for periods of not more than five years, such number of Army Air Corps Reserve officers as he may deem necessary, not to exceed 1350, and that upon the termination of such a period of active duty of not less than three years in duration, such Air Corps Reserve officers shall be paid a lump sum of $500.00, which sum shall be additional to any pay and allowances which they may otherwise be entitled to receive. During his period of active duty, the Reserve officer receives the same pay and allowances as the regular officer of the same grade.

In the last two years approximately 100 Air Corps Reserve officers, all graduates of the Air Corps Training Center, were commissioned as 2nd Lieutenants in the Regular service, and in the future opportunities will be offered for a limited number of Reserve officers to obtain Regular commissions.

Since it is the object of the Training Center to train and qualify not only an airplane pilot, but also an Air Corps officer with the required high standard of education, professional ability, character, sound physique and excellent health, it is well to remember the final product in discussing the selection of our students.

The students at the Air Corps Training Center are composed of student officers and Flying Cadets. Student officers are selected from recent graduates of the U.S. Military Academy and from junior officers of other branches of the service who have voluntarily requested assignment for flying training and who have passed the prescribed physical examination for flying. Their flying and ground school training is the same as the Flying Cadet. However, since the student officer has already received his military training, only a limited amount of military instruction is given him.

Candidates for appointment as Flying Cadets must be unmarried, male citizens of the United States, between the ages of 20 and 26 years inclusive, who have completed at least two years' work in an accredited college or university or who can pass an examination covering such work, of excellent character and of sound physique and in excellent health.

Any person fulfilling the general requirements stated above may apply for appointment as a Flying Cadet to The Adjutant General of the Army, Washington, D.C., in a manner and on forms provided by The Adjutant General's Office, or any Air Corps station.

Cadet Examining Boards, composed of two or three Air Corps officers and a flight surgeon, are provided at various locations under U.S. jurisdiction, and approved applications are forwarded to these boards who notify the candidates as to time and place of their examination. It is the responsibility of these cadet examining boards to determine the candidate's mental, moral and physical qualifications for appointment as a Flying Cadet. If the candidate has furnished documentary evidence from an accredited college or university of at least two years' work, he is exempted from the written mental examination. If he cannot furnish this evidence, he is required to take a written mental examination covering in scope the equivalent of two years' college work, which examination covers U.S. History; General History; English Grammar and Composition; Geography; Arithmetic; Algebra; Geometry, Plane and Solid; Trigonometry and Elementary Physics. Candidates furnishing evidence for exemption can be examined any time convenient to the Cadet Examining Board. Those required to take the written mental examination can only be examined three times a year; on the second Tuesday in April, August and December.

In order to determine if the candidate is of sound physique and in excellent health, a physical examination is given. The physical standard of flying training is higher than that required for appointment to the Military Academy or enlistment in the Army, and the examination tests are somewhat different, particular attention being given to those faculties and functions which are of particular importance in flying. Visual acuity must be normal in each eye without the aid of glasses. Particular attention is paid to ocular muscle imbalance. Normal color vision is required. Hearing must be normal, and there must be no obstruction in the nasal passage. Equilibrium must be normal, and there must be no tendency toward nervous or emotional instability. The psychological make-up is carefully determined.

Documentary evidence, consisting of three letters signed by persons of recognized standing in their community as to the candidate's character, is also examined in the final determination of the candidate's qualifications for appointment.

Upon the completion of their examination, the Cadet Examining Boards forward the report with their recommendation to the Chief of the Air Corps, in whose office the qualified candidates are listed and arranged in priority groups and the candidate notified of his success or failure to qualify.

Shortly before the beginning of training of each new class, a predetermined number, depending upon the size of the class, are notified to report to the nearest Army Recruiting Officer to enlist as a Flying Cadet and to report to Randolph Field on a specified date to begin training.

The Flying Cadet receives $75.00 a month pay, also food, shelter, uniforms, clothing and other equipment. Government transportation from his recruiting station to Randolph Field is also furnished him, also his return transportation upon his discharge from the service.

The Air Corps Training Center is commanded by a Brigadier General as an Assistant Chief of the Air Corps, who is responsible for the instruction, training, and employment of all elements of his command. He is responsible for the coordination of instruction of all the schools within the Air Corps Training Center, for the proper execution of the instruction, policies and training prescribed by the War Department affecting the Training Center; he determines the priority of production and distribution of such Air Corps Training Center equipment as may be produced or distributed by the San Antonio Air Depot.

The Air Corps Primary Flying School, located at Randolph Field, has for its object the instruction and training of students, who are assigned by competent authority, in the fundamental principles of piloting airplanes and in the technical subjects intimately connected therewith, to a degree of proficiency which will enable them to pursue satisfactorily the course of training prescribed for the Advanced Flying School.

The training at the Primary Flying School is divided into three main departments:

(a) Department of Flying.
(b) Department of Ground Instruction, and
(c) Military Department.

The Department of Flying is divided into two stages, the Primary Stage, covering a period of four months' instruction and approximately 70 hours of flying, using what we call the Primary Training airplane, and the Basic Stage, covering a period of four months and approximately 118 hours of flying, using what we call the Basic Training airplane, which is a larger and more advanced type. The Primary and Basic stages, each commanded by a stage commander, are divided into flights, commanded by flight commanders, who have in their flight six or eight flying instructors, and each instructor in turn has from four to six students.

During Primary Stage training, the student learns the fundamental and elementary operations and maneuvers of the airplane, such as effect of controls, straight and level flying, gentle and medium turns, climbs and climbing turns, glides and gliding turns, maneuvering an airplane according to a predetermined course or pattern, taxying, take-offs, landings, spins, spirals, simulated forced landings, accuracy work and acrobatics. During his Basic Stage training, the student is first given transition to the Basic Training type, reviews all of his Primary Stage work with the new type plane, and is then given training in formation flying, strange field landings, instrument or blind flying under the hood, night flying, day and night navigation and radio beam flying.

It is our experience that the normal student with sufficient natural aptitude or inherent flying ability will solo safely with eight or ten hours of dual instruction. His solo work is then carried on with a certain amount of dual instruction as he advances to each new and advanced phase or maneuver.

The Ground School or Academic Department gives instruction in theoretical and practical subjects immediately applicable to the students' flying and military work, as follows:

THEORY OF FLIGHT: Instruction in the fundamental principles of aerodynamics and the performance of aircraft.

AIRPLANES: The theory of simple trusses and the application to the airplane for a qualitative analysis of the stresses involved in the main structural members of the airplane. The materials used in airplane construction. Laboratory work on airplanes to include rigging of wings and control surfaces; the repair of fabric and minor structural members; routine maintenance and minor field repair.

AIRPLANE ENGINES: The theory of internal combustion engines. Laboratory work on available service type engines, to include ignition and carburetion systems, valve timing, trouble shooting, routine maintenance, and minor field repair. Instruction in the principles and use of engine instruments.

BUZZER PRACTICE: Instruction in the radio code, and the authorized procedure signs, practice in receiving and transmitting.

PERSONAL EQUIPMENT OF THE PILOT: The use and care of the parachute and other items of flying clothing.

GROUND GUNNERY: Instruction in the nomenclature, care and operation of the Browning Aircraft Machine Guns, synchronizers, sights and gun mounts.

MAPS: The theory of map construction. Instruction in the use of maps in Aerial Navigation and tactical missions.

METEOROLOGY: Instruction in the meteorological elements and their influence on weather forecasting. The influence of the weather on the operation of aircraft. The sources of weather data available to the military pilot.

AIR NAVIGATION: The theory of air pilotage and dead reckoning; radius of action and interception problems; the principles and use of navigational instruments.

FEDERAL AID TO AIR NAVIGATION: Instruction in the regulations, both military and civil, pertaining to the operation of aircraft in flight. Description and instruction in the use of the various aids to navigation available along the Federal Airways system. Practical application of such aids and use of instruments and radio when flying the airways by means of visual contact when blind.

Also MILITARY LAW AND MANUAL OF COURTS-MARTIAL, which pertain to his military training, the elementary principles of criminal law with particular reference to the crimes and offenses denounced by the punitive Articles of War. The elementary principles of the jurisdiction and procedure of courts-martial and the rules of evidence applied by them.

This gives the student approximately 320 hours of Ground School or Academic training accomplished by means of study, lectures, recitation, demonstrations and examinations.

The military department, under a Regular Air Corps officer as Commandant of Cadets, which gives to the Flying Cadet the fundamental training and experience to enable him to qualify for duties of a junior officer of the Air Corps, is organized and operated similar to that of our best military colleges, with the U.S. Military Academy at West Point as our guide. The Flying Cadets are organized into the Flying Cadet Battalion. The upper classmen or its officers and the cadets perform such additional duties as Officer of the Day, noncommissioned officer in Charge of Quarters, and other military duties. Infantry drill and ceremonies, such as parades, reviews and guard mount; interior guard duty and military courtesies and customs of the service are given throughout his training at Randolph Field.

Three classes are trained by the Training Center each year, a new class entering the Primary Flying School at Randolph Field during the months of March, July and October. At the end of eight months' training at the Primary Flying School, the class goes to the Advanced Flying School at Kelly Field for a further advanced stage training of four months.

The object of the Air Corps Advanced Flying School at Kelly Field is to instruct and train students with a view to qualification as Airplane Pilots for duty with a tactical unit of Pursuit, Attack or Observation Aviation, and to qualify students taking the Observation pilot course as Airplane Observers.

The four months' course at the Advanced Flying School totals approximately 135 hours of flying. This instruction includes:

FLYING: Transition to Attack, Bombardment, Pursuit and Observation types of service airplanes, and specialized flying training in Attack, Pursuit or Observation Aviation. The instruction in Instrument Flying under the hood includes approximately ten hours' practice in the use of the Department of Commerce radio aids to navigation. Such instruction in instrument flying other than under the hood (cloud flying) is given up to a maximum of five hours, as is consistent with the equipment available, necessary safety precautions, and instructions from the Bureau of Air Commerce; Night Flying (Local); Day Navigation Flying; Night Navigation Flying.

The Ground School or Academic instruction includes:

INFANTRY MISSIONS: to include instruction in the various types of missions, communications methods and procedure in cooperation with ground troops, and all work required of divisional aviation.

COOPERATION WITH ARTILLERY: To include instruction in the description of artillery materiel, artillery terms and definitions, methods of artillery fire, Air Corps communication methods and procedure of cooperation with Artillery; communications, blackboard, miniature range, puff target and actual Field Artillery firing problem.

OBSERVATION AVIATION: To include instruction in the history, object, organization, training, operation, various types of reconnaissance, radio, photographic missions, tactical employment, communication methods, and cooperation with other branches of the Service.

PURSUIT AVIATION: To include instruction in the history of development, the Pursuit airplane, factors influencing combat, the Pursuit pilot, individual tactics, the Pursuit flight, flight formation, flight tactics, the Pursuit squadron, squadron tactics, the Pursuit group, group tactics, the wing, principles of employment and administration of units.

SIGNAL COMMUNICATIONS: To include instruction in the operation of airplane radio telegraph and radio telephone communication procedure, and use of radio beacons in navigation.

RECONNAISSANCE: To include instruction in the different types of missions, orders affecting same, types of reconnaissance, reports and cooperation with ground troops.

BOMBS AND EXPLOSIVES: To include instruction in the nomenclature and handling of all explosives and bombs used by the Air Corps.

BOMB RACKS: To include instruction in the operation, handling and maintenance of bomb racks used by the Air Corps.

BOMB SIGHTS: To include instruction in the operation, handling and maintenance of bomb sights used by the Air Corps.

AERIAL PHOTOGRAPHY: To include instruction in the types and uses of aerial photography, aerial cameras, their accessories and methods of operation and installation.

COMBAT ORDERS: To include instruction in the interpretation and composition of field orders, squadron orders and flight orders.

MILITARY ORGANIZATION: To include a general discussion of the military organization of the Army with special emphasis on the organization of the Air Corps units.

SQUADRON DUTIES OF JUNIOR OFFICERS: To include instruction in the duties and responsibilities of junior officers in a squadron, with special emphasis on the duties of the squadron adjutant, engineer, supply and mess officer; the purpose, preparation and rendition of efficiency report, AGO Form 67.

CODE PRACTICE: To develop all students to send and receive 18 words a minute in the Air Fire-Control Code, the Air-Ground Liaison Code and the Radio Service Code.

WAR PLANNING PRINCIPLES: To include the principles, objectives and general methods prescribed for industrial mobilization.

ENGINE AND EQUIPMENT LECTURES: Lectures on the latest development in engines and equipment are given by a representative of the Materiel Division.

GHQ LECTURES: Lectures on the organization of and problems confronting the GHQ Air Force.

TRAP SHOOTING: Each student to fire approximately 200 rounds.

The Flying Cadets at the Advanced Flying School continue their military organization, training and experience.

The Flying Cadet is also provided with athletic, recreational and social facilities and activities. His social and professional status at the Training Center is similar to that of a West Point Cadet or an Annapolis Midshipman.

The opportunities for a Flying Cadet to continue his military career have already been set forth. In the event he does not receive a commission in the Regular service, upon the termination of his tour of active duty as an Air Corps Reserve officer he again returns to civilian life and his civilian profession, retaining his Reserve commission.

With his excellent education, training and experience, commercial aviation also offers many opportunities for him to make aviation a career. We are proud of the fine reputation and record of our graduates in commercial aviation.

It has been authoritatively stated that no similar institution in the world turns out a better flying military man than our Air Corps Training Center, and we take a great deal of satisfaction and pride in believing that, whether or not all our graduates continue to make aviation their career, we have helped build and develop finer American citizens.

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At 5:25 a.m., April 29th, the C-33 Transport plane No. 36-78, of the Rockwell Air Depot, Coronado, Calif., rose in the early morning sky, pointed its nose towards El Paso, Texas, enroute to Selfridge Field, Mich., to ferry personnel to Muroc Lake, Calif., to participate in the big GHQ Air Force war games taking place there during the month of May.

Master Sergeant Boyd R. Ertwine, pilot, Pvt. 1st Cl. Lloyd L. Sailor, co-pilot, and Sgt. R.A. Ross, crew Chief, were the crew on this mission.

HISTORY OF THE 31ST BOMBARDMENT SQUADRON.

The 31st Bombardment Squadron, Air Corps, was originally organized in May, 1917, at Kelly Field Texas, as 1st Company D, Provisional School Squadron, Aviation Section, Signal Corps. On June 26, 1917, its designation was changed to 31st Aero Squadron. It served overseas in the World War as a training squadron from August 23, 1917, to April 4, 1919. It was not engaged in combat. The 31st Aero Squadron was demobilized at Mitchel Field, Long Island, New York, on April 4, 1919. In April, 1923, the 31st Aero Squadron was reconstituted on the inactive list of the Regular Army as the 31st Bombardment Squadron.

On April 1, 1931, the Squadron was reconstituted on the active list of the regular Army at March Field, Calif., under the command of Captain Earle G. Harper, Air Corps, with an enlisted strength of 132 men. On June 30th of that year, the Squadron was relieved from assignment to the 19th Bombardment Group and was assigned to the 7th Bombardment Group, Air Corps.

The Squadron was stationed at March Field, Calif., until December 4, 1934, on which date it was transferred with the 7th Bombardment Group to its present station, Hamilton Field, Calif. During the period from its reorganization on April 1, 1931, to its transfer from March Field, the organization took part in various maneuvers with the 7th Bombardment Group. In 1933, this Squadron had an unusually large number of officers and enlisted men detailed to C.C.C. duty in the various C.C.C. camps in Southern California. The Squadron had eight officers and 32 enlisted men detailed to duty with the Western Zone, Army Air Corps Mail Operations during the period from February 14, 1934, to May 15, 1934. All airplanes assigned to the Squadron were used on air mail operations during that period.

The Squadron had been stationed at Hamilton Field, Calif., since December 5, 1934. On March 20, 1935, the Squadron was changed from 132 to 49 enlisted men and became an active unit of the GHQ Air Force. During the period from May 20, 1935, to May 29, 1935, the Squadron was encamped at Mather Field, Calif., with the 7th Bombardment Group, Air Corps, for maneuvers and field exercises.

On August 18, 1935, the Squadron, with a detachment of enlisted men attached from the 70th Service Squadron, departed for Medford, Oregon, and engaged in maneuvers at that place until August 24, 1935. During the period from October 14 to October 29, 1935, the Squadron was encamped at Mather Field for annual bombing practice. On November 4, 1935, the organization departed with the 7th Bombardment Group for Merced, Calif., and was engaged in the 1st Wing, GHQ Air Force maneuvers until November 18, 1935. During the period from November 29 to December 19, 1935, this organization took part in the GHQ Air Force exercises in Florida.

In March, 1936, the Squadron participated in the 1st Wing, GHQ Air Force, maneuvers at Muroc Dry Lake, Calif., and was stationed at that place from March 9th to 19th. On May 3, 1936, the Squadron was stationed at Mather Field until the 29th of that month for its annual bombing practice. During the period from August 2nd to 9th, 1936, the Squadron was stationed at Boise, Idaho, for field exercises. On October 27, 1936, the Squadron moved with the 7th Bombardment Group to Fort Lewis, Wash., for joint Army and Navy Exercises in the vicinity of Puget Sound. The organization returned to its home station on November 8, 1936.

On September 1, 1936, the enlisted strength of the Squadron was increased to 97 enlisted men, who were gained by transfer from the 69th and 70th Service Squadrons which were placed on the inactive list of the Army.

The Squadron was stationed at Fresno, Calif., for bombing maneuvers during the period from December 2, 1936, to December 8, 1936.

The 31st Bombardment Squadron has been commanded by the following-named Air Corps officers.

April 1, 1931, to January 1, 1932, Captain Earle G. Harper.

January 1, 1932, to January 6, 1933, Captain Harold W. Beaton.

January 6, 1933, to January 6, 1934, 1st Lieut. Ralph A. Snavely.

January 6, 1934, to November 16, 1936, Major Harold D. Smith.

November 16, 1936, to present date, Major James G. Taylor.

On September 10, 1934, The Adjutant General of the Army approved the Squadron insignia, which is described as follows:

"On a black triangle, one point up, bordered white, a skull and cross bones proper."

The skull and crossbones insignia was originally placed on the ships of the 31st Aero Squadron at Issoudun, France, in 1918. It is not definitely known what daring aviator of those days first painted this insignia on his airplane. The insignia was used in various forms until Major Harold D. Smith started to trace the squadron insignia and suggested the present insignia, which now has the approval of the War Department.

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MAJOR HOUSE TO COMMAND 1ST PURSUIT GROUP

Major Edwin J. House, Air Corps, is to assume a responsibility which for a good many years has fallen upon the shoulders of Lieut. Colonel Ralph Royce, namely, that of commanding the 1st Pursuit Group at Selfridge Field, Mt. Clemens, Mich. Major House has been named by the War Department to command this most famous unit of the Air Corps upon the departure of Colonel Royce for his new station in the Philippine Islands.

The 1st Pursuit Group forms a part of the General Headquarters Air Force which is conducting extensive maneuvers and war games on the West Coast throughout the month of May. The Group left Selfridge Field on May 2nd to wing its way to the West Coast.

The 1st Pursuit Group is without dispute the most famous of American air units. The three Pursuit squadrons comprising it, the 94th, 27th and 17th, all fought in France during the World War and numbered among their members a majority of the American "Aces," including Edward Rickenbacker, Raoul Lufbery, Frank Luke, Wilbur W. White, Reed G. Landis, Douglas Campbell, Lloyd A. Hamilton, Reed M. Chambers, Jerry C. Vasconcells, Paul Baer, Frank O'D. Hunter and Hamilton Coolidge. Nearly two hundred German planes were brought down by this Group while serving on the Belgian and French fronts in 1918. The command of this unit has always been considered one of the prize plums of the Air Corps, and is a tremendous compliment to the abilities and accomplishments of Major House.

Major House graduated from West Point on August 30, 1917. As a cadet he played on the Army football and baseball teams and was captain of the hockey team. He was awarded the Army Athletic Council Sabre.

Following his graduation from the U.S. Military Academy, Major House was commissioned a second lieutenant and assigned to the 48th Infantry. He was promoted to 1st Lieutenant on the same date that he was originally commissioned, namely, August 30, 1917. After serving with his regiment at Newport News, Va., from October 6, 1917, to February 15, 1918, during the course of which he commanded a company from December 6, 1917, he was detailed to the Signal Corps, and served as Executive Officer, Storage and Traffic Department, Office of the Chief Signal Officer, Washington, D.C., from March 15 to June 21, 1918, when he was transferred to the Bureau of Aircraft Production with the same duties.

Transferred to the Department of Military Aeronautics, July 22, 1918, with station at Langley Field, Va., he was on duty thereat as Tactical Officer at the School for Aerial Observers, also Assistant Executive, Engineer Officer and Post Adjutant. He began his flying training at Langley Field in July, 1918, and was rated an Airplane Pilot two days after the Armistice was signed. Upon his graduation from the Tactical School at Langley Field in 1922, he was transferred to the Hawaiian Department, where he served as Group Operations Officer of the 5th Composite Group. In 1925, upon the completion of his tour of duty in Hawaii, he was sent to the Air Corps Tactical School for duty as Adjutant and Instructor. Upon the completion of this tour of duty, Major House was sent to Mitchel Field, where he commanded the 5th Observation Squadron for one year. He was then detailed to the Plans Division, Office of the Chief of the Air Corps, Washington, D.C., where he remained for four years.

From Washington, Major House was sent to Selfridge Field, where he has commanded the 94th Pursuit Squadron, and for the past year has served as Group Operations Officer and Group Executive.

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First Student Aviator: "Quick, what do I do now, instructor?"

Second ditto: "Hell's bells, aren't you the instructor?"

MANY FISH DINNERS AS AFTERMATH OF BOLLING FIELD FLOOD

The truth of that old saying that it is an ill wind that bloweth no man good was borne out during the recent flood at Bolling Field, D.C. The News Letter Correspondent states that a large number of fish became stranded in the puddles left in the low parts of the field when the water receded and, as a result, W.P.A. workers and negroes living in the vicinity of the post had no trouble getting the fish with clubs and pitchforks and carrying them off in full burlap sacks and even wheelbarrows. It is stated that some of the fish weighed as much as twenty pounds. The flood in March, 1936, and others before that time had the same interesting sequel.

Before the new anti-flood sea wall at Bolling Field could be completed around the Naval Air Station hangars, the spring freshet waters from the hills of Maryland and Virginia and the tide in the Potomac River combined to flood the flying field and hangars and force the Army to evacuate personnel and equipment.

Early on the morning of Tuesday, April 27, 1937, the Potomac began to rise above its banks and creep slowly across the field to the hangars, but receded with the ebb tide. The Meteorological Office issued advance warning, and all hands stood by to carry out the flood plan drawn up from previous experience.

The airplanes were taxied to the higher ground of the new Bolling Field and staked out along the new runways. All equipment that would possibly get wet was stored in the warehouses and gymnasium at the new field, and several of the officers' quarters on the field were evacuated. Other equipment that was not moved was raised high enough to remain above the water level. With each tide the water came up higher and reached its crest on the morning of April 28th. Although the high water mark was twenty inches lower than that of last year, the whole field was covered with an average of thirty inches of water and looked like a lake.

Two departments, the Post Radio Station and the Weather Office located on the second floor of the Operations building, continued to function throughout the flood, the personnel on duty going to work by boat. The new control tower seemed out of its element and took on the aspect of a lighthouse.

While the flood was at its highest, General Westover, Chief of the Air Corps, returned from a cross-country navigation flight and landed on the new field, where operations were continued. Before proceeding to his office, he made a tour of inspection of the flooded field with the Commanding Officer of the post by boat.

The next day the water had gone down enough to allow the hangars and other buildings to be cleaned, although the runways were still covered with water. On Friday and Saturday, all equipment was moved back and nearly all signs of the flood were removed and the field was back in normal operation by the first of the following week.

This flood was the third experienced by Bolling Field since 1933 and, although the post is always prepared, the floods are an expense to the government. The personnel are hopefully anticipating the appropriation which will allow the new field to be completed and eliminate the almost annual moving from floods.

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THE "MAGIC KEY" BROADCAST

In preparation for Army Day, an opportunity was given the Army by the National Broadcasting Company to join its "Magic Key" program. The 2nd Bombardment Group, Langley Field, Va., was honored in being chosen to make the broadcast for the War Department.

Using one of the Group's three Boeing B-17, four-engined "Flying Fortresses," this broadcast was accomplished while flying over Washington, D.C., on April 4, 1937. The broadcast was coordinated from the N.B.C. studios in New York City, with Mr. John B. Kennedy, the well known N.B.C. commentator, aboard. Also aboard the big bombing plane were Mr. Hartley, in charge of programs of special events; General Gerald C. Brant, Commander of the 2nd Wing, GHQ Air Force; Lieut. Colonel Robert Olds, Commander of the 2nd Bombardment Group; Major C.V.Haynes, 49th Bombardment Squadron commander, and members of the regular combat crew of this flying fortress.

A six-minute program was broadcast, consisting of an interview between Gen. Brant and Mr. Kennedy, and a realistic demonstration of the manner in which the combat crew on a flying fortress goes into action.

Air Mail letters, telegrams and cablegrams have been received since the broadcast, all of which commented enthusiastically on the interest, composition and clarity of the broadcast.

It should be of interest to all Air Corps personnel to know that standard U.S. Army radio equipment was utilized throughout the broadcast.

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PROMOTION OF NONCOMMISSIONED OFFICERS

Two noncommissioned officers stationed at Langley Field, Va., were recently appointed to the grade of Master Sergeant, Air Corps. Technical Sergeant Dan W. Tingle received this promotion on April 19th, and First Sergeant LeRoy L. Johnson on May 1, 1937.

Biographies

LIEUT. COLONEL GEORGE E. STRATEMEYER

Lieut. Colonel George E. Stratemeyer, Air Corps, now on duty at Hamilton Field, Calif., as Commanding Officer of the 7th Bombardment Group, was born November 24, 1890, in Ohio. After graduating from the United States Military Academy, June 12, 1915, he was appointed a second lieutenant and assigned to the 7th Infantry, with which regiment he served at Galveston, Texas, September 11 to 22, 1915; at El Paso, Texas, September 25 to October 29, 1915; at Douglas, Arizona, to November 26, 1915; at Nogales, Arizona, to December 11, 1915, and at El Paso to August 29, 1916. He was then detailed to the Aviation Section, Signal Corps, and ordered to the Signal Corps Aviation School at San Diego, Calif., for flying training. Upon the completion of this training, he received the rating of Junior Military Aviator, as of May 3, 1917.

Assigned to duty as a pilot with the 1st Aero Squadron at Columbus, New Mexico, Colonel Stratemeyer served with that organization until May 14, 1917, when he was transferred to Columbus, Ohio. Here he organized and commanded the U.S. School of Military Aeronautics, Ohio State University.

In November, 1917, he was ordered to Kelly Field, Texas, where he served as test pilot from November 16 to December 16, 1917, and as Executive to the Commanding Officer of Kelly Field until January 7, 1918. He was then assigned to organize and command the Enlisted Mechanics Training Department, Kelly Field, later the Air Service Mechanics School. He was in charge of this school during the remainder of the time it was located at Kelly Field, and in February, 1921, when it was moved to Chanute Field, Rantoul, Ill., later to become one of the departments of the Air Corps Technical School, Colonel Stratemeyer was transferred to that station to assume command of the field and to continue in his capacity as commandant of the school.

From March 30, 1919, to May 12, 1919, Colonel Stratemeyer was Commanding Officer of the Victory Loan Flying Circus, Mid West Flight No. 2.

Ordered to duty in the Hawaiian Department, where he served from October 16, 1921, to July 12, 1924, he was in command of the 10th Air Park at Luke Field to December 12, 1921; Commanding Officer of the Hawaiian Divisional Air Service at Schofield Barracks to April 5, 1922; Commanding Officer of Air Park No. 10, to May 19, 1922; Commanding Officer of Luke Field and the 5th Composite Group to January 15, 1923; Hawaiian Department Air Service Officer to September 3, 1923; Assistant Air Officer, Hawaiian Department, to July 12, 1924.

For the next five years, Colonel Stratemeyer was on duty at the United States Military Academy, West Point, N.Y., as Assistant Instructor in Tactics, in addition to performing various other duties.

After completing the one-year course at the Air Corps Tactical School, then at Langley Field, Va., graduating in July, 1930, he pursued the two-year course of instruction at the Command and General Staff School at Fort Leavenworth, Kansas, graduating on June 30, 1932. Immediately thereafter, he was assigned to duty as Instructor at the Command and General Staff School, and he served in that capacity until July 1, 1936, when he was transferred to his present command at Hamilton Field.

LIEUT. COLONEL JUNIUS H. HOUGHTON

Lieut. Colonel Junius H. Houghton, Air Corps, at present on duty as Commanding Officer of the Fairfield Air Depot, Patterson Field, Ohio, is a native of Titusville, Pa., where he was born on August 21, 1892.

Following his graduation from the U.S. Military Academy, June 13, 1916, he was commissioned a second lieutenant and assigned to the 19th Infantry. During his graduation leave he was on voluntary duty as an instructor at the Plattsburg Training Camp, New York, July 3 to August 8, 1916. He served with his regiment at Fort Sam Houston, Texas, from September 15, 1916, to February 21, 1917, and at Mercedes, Texas, with the 16th Cavalry, to which he was transferred January 13, 1917, from February 23 to August 15, 1917. He was promoted to 1st Lieutenant, Infantry, July 1, 1916, and to Captain, Cavalry, July 30, 1917.

Detailed to the Aviation Section, Signal Corps, Colonel Houghton was ordered to undergo flying training at the Signal Corps Aviation School at Rockwell Field, San Diego, Calif. He completed the course of instruction in December, 1917, and received the rating of Junior Military Aviator as of the 13th of that month.

On February 2, 1918, he was transferred to Gerstner Field, Lake Charles, La., where he took additional flying training and performed various post administrative duties. From June to August, 1918, he performed the additional function of Officer in Charge of Flying.

Transferred on August 20, 1918, to Carlstrom Field, Arcadia, Fla., Colonel Houghton served at that field and at Dorr Field, adjacent to Carlstrom Field, as Officer in Charge of Pursuit Training and Executive Officer until July 8, 1919, when he was transferred to Selfridge Field, Mt. Clemens, Mich., where he assumed command of the 27th Pursuit Squadron. In September, 1919, he assumed command of the 1st Pursuit Group, then at Kelly Field, serving in that capacity until October 15, 1919, when he was transferred to Scott Field, Belleville, Ill.

After commanding that station until November, 1921, he was ordered to duty in the Philippines. He commanded Kindley Field and the 2nd Observation Squadron from December, 1921, to March 10, 1922; was Adjutant of that Squadron to April 30, 1922; Commanding Officer of Camp Nichols and of the 11th Air Park to September, 1922; Commanding Officer of the 28th Bombardment Squadron, Clark Field, P.I., to June, 1923; Commanding Officer of Clark Field at various periods, and Commanding Officer of Flight A, 3rd Pursuit Squadron, Clark Field, from June to October, 1923.

Upon his return to the United States following the completion of his foreign service tour, Colonel Houghton was assigned to the Rockwell Air Depot, Coronado, Calif., where he performed the duties of Chief of the Supply Division, Station Supply Officer and Depot Property Officer from December 10, 1923, to June 28, 1925. From June, 1925, to July, 1926, he was a student at the Air Corps Engineering School at McCook Field, Dayton, Ohio. Upon his graduation, he returned to the Rockwell Air Depot, where he performed various duties, such as Engineering Officer, Operations Officer, Chief Engineer Officer and temporary Commanding Officer.

Transferred to the Middletown Air Depot, Middletown, Pa., Colonel Houghton commanded this Air Corps activity from August 13, 1929, to June 15, 1933, when he was ordered to duty in the Panama Canal Department. His duties in the Canal Zone were of a varied character. At different times he served as Adjutant, Executive Officer and Commanding Officer of France Field; Commanding Officer of the Panama Air Depot, and Commanding Officer of the 19th Composite Wing, the assignment last named for a period of five months.

Following the completion of his three-year tour of duty in Panama, Colonel Houghton was assigned to his present duty as Commanding Officer of the Fairfield Air Depot.

Colonel Houghton was promoted to Major, Air Corps, June 30, 1927, and to Lieut. Colonel (temporary) March 4, 1935.

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BRITISH AIRMAN INSPECTS AIR ACTIVITIES

Commodore R. Leckie, an officer of the British Royal Air Force, on an inspection tour of aviation activities in the United States, recently paid a visit to Chanute Field, Rantoul, Ill., where he was a guest of the Commandant of the Air Corps Technical School, Col. Junius W. Jones.

The British visitor was very much impressed with the similarity in the plans England and America were using in training their forces. He stated, however, that the system used by the two nations was somewhat different. The fact that all technical training for the U.S. Air Corps was centered at Chanute Field also impressed him.

From Chanute Field Commodore Leckie planned to go to the West Coast to visit aircraft manufacturing plants, and on his return trip to visit army posts at Fort Worth and San Antonio and the Naval Air Station at Pensacola, Fla., and to confer with U.S. Army officials in Washington before returning to England.

Commodore Leckie highly praised the hospitality and courtesy shown him during his visit in this country. He stated that North America is no strange land to him, for prior to the World War he was a resident of Canada and visited the States. This is his first visit to the United States since the war and, naturally, the many changes which have taken place since that time greatly interested him.

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ACTIVITIES OF THE 3RD TRANSPORT SQUADRON

With the limited facilities available, the 3rd Transport Squadron, San Antonio Air Depot, Duncan Field, Texas, takes pardonable pride in the amount of work it has been able to accomplish, and the efficiency with which it has performed its missions. During April, six inter-depot freight runs were made, and eleven runs within this Supply Area, carrying a total of 80,505 pounds of freight and 18 passengers, with a total of 26,635 miles. Equipment available for use was one C-33 the entire month, with one C-33 on memorandum receipt from Randolph Field for eleven days, and one C-27C. The C-27C was not available for use the first eight days because of engine change. The Depot's C-33 was loaned on April 29th for use in the GHQ Air Force Maneuvers on the West Coast the first ten days in May.

Obituaries

LIEUT. ROBERT S. FISHER

The untimely death on April 24th of Second Lieutenant Robert S. Fisher, Air Corps, son of Colonel Arthur G. Fisher, Commanding Officer of Scott Field, Ill., deprived the Air Corps of a very promising young officer.

Lieut. Fisher was the victim of a rather unusual accident. He and Lieut. D. Ross Ellis, Air Reserve, were on a training flight from Randolph Field to Oklahoma City, Okla., when the accident occurred. Witnesses of the accident, which happened near Pilot Point, Texas, stated that the plane was maneuvering at a low altitude when Lieut. Fisher, pilot of the plane, who was leaning out of the cockpit, appeared to lose his balance and fall out. Apparently he pulled the ripcord of his parachute, but in his descent he struck the tail assembly of the plane and received fatal injuries. The parachute opened and slowed his fall.

Lieut. Ellis stated that he did not see Lieut. Fisher at the instant he started falling, but felt the shock of the body striking the rear assembly. Although the rudder controls were jammed, Lieut. Ellis, in a remarkable demonstration of skillful flying, piloted the airplane back to Hensley Field, Dallas, Texas, using only the ailerons.

Funeral services for Lieut. Fisher were held at the Randolph Field chapel on April 28th, with interment at the National Cemetery at Fort Sam Houston, Texas.

The deceased officer was born at Manila, P.I., July 29, 1909. After attending George Washington University, Washington, D.C., for one year, and the University of California for 2½ years, he applied for and received an appointment as a Flying Cadet in the Air Corps.

After graduating from the Primary Flying School, Brooks Field, Texas, on September 29, 1931, and from the Advanced Flying School, Kelly Field, Texas (where he specialized in Pursuit Aviation) on February 26, 1932, he was commissioned a second lieutenant in the Air Reserve, rated as an Airplane Pilot, and assigned to extended active duty in the Hawaiian Department. He served with the 19th Pursuit Squadron at Wheeler Field, performing at various times such duties as Assistant Engineering Officer, Assistant Operations Officer and Squadron Armament Officer.

Upon the completion, in December, 1933, of his tour of duty in Hawaii, he was transferred to Brooks Field, San Antonio, Texas, for duty with the 12th Observation Group. Reverting to inactive status at the end of two years' active duty, Lieut. Fisher enlisted as a Private in the Air Corps in order to be eligible to compete in the examination for a commission in the Air Corps, Regular Army. He was promoted to 1st Lieut., Air Reserve, April 22, 1935.

Successful in his examination for a permanent appointment in the Air Corps, he was commissioned a 2nd Lieutenant on July 11, 1935, and assigned to duty at Randolph Field, Texas. Lieut. Fisher had accumulated a total of over 1300 flying hours during his brief career with the Air Corps.

The heartfelt sympathy of the Air Corps is extended to his widow; to his parents, Colonel and Mrs. Arthur G. Fisher; to his sister, Miss Mary Fisher, and to his brother, Lieut. Henry Fisher, stationed at Selfridge Field, Mich.

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Flying Cadet Paul M. Palmer, age 22, a student on the basic stage at the Primary Flying School at Randolph Field, Texas, died as the result of an airplane accident on the morning of May 4th, when his plane crashed on Krueger Field, an auxiliary landing field about six miles east of Randolph Field.

Flying Cadet Palmer, who hailed from Carlinville, Ill., attended High School in that city and Blackburn Junior College. He entered the Primary Flying School on October 12, 1936, and was transferred from the primary training stage to the basic training stage last February.

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Lieut. James Monroe Richardson, World War flyer and recipient of the Distinguished Service Cross, died on April 26th in Hahnemann Hospital, Philadelphia, Pa., after a brief illness. He had resided at Old Gulph Road, Wynnewood, since the war.

A native of Memphis, Tenn., where he was born on December 25, 1892, Lieut. Richardson attended Vanderbilt University for three years. Enlisting in the Aviation Section, Signal Enlisted Reserve Corps, June 3, 1917, he received his ground school training at the School of Military Aeronautics, University of Illinois, Urbana, and his flying training at Chandler Field, Essington, Pa.; Selfridge Field, Mich.; and Gerstner Field, Lake Charles, La. He was commissioned a second lieutenant on February 6, 1918, and assigned to active duty at

Gerstner Field.

Ordered to duty overseas, he arrived in France on March 9, 1918, and was sent to the 3rd Aviation Instruction Center for advanced flying training, following the completion of which he took aerial gunnery training at the Aerial Gunnery School at Cazaux, France. For a period of three weeks he was on duty as a ferry pilot, and he was then assigned to duty with the 1st Aero Squadron.

Lieut. Richardson fought at Chateau Thierry, Argonne and Belleau Wood. He was credited with the destruction of four enemy planes in aerial combat. In his last combat, on October 6, 1918, he received wounds which necessitated his confinement in a hospital until December 13, 1918. It was this combat which gained for him the award of the Distinguished Service Cross, the citation therefor, being as follows:

"For extraordinary heroism in action near Grand-Pre, France, October 6, 1918.

Lieut. Richardson undertook an infantry contact patrol mission under weather conditions which necessitated flying at an altitude of only 100 meters. When the front lines machine guns opened an effective fire on his plane, he was wounded in the feet, but he continued on the mission until the front lines of the American troops were located and his observer had written out a report for the division commander."

Returning to the 1st Aero Squadron December 22, 1918, he served therewith to March 9, 1918. Thereafter, until his return to Garden City, L.I., New York, in September, 1919, he was on detached service at the University of Grenoble, France.

Lieut. Richardson, following his honorable discharge from the military service, made his home in Philadelphia. He contributed many articles to aviation publications. He was president of the H.D. Catty-Franz Euler Corporation, a foils and cellophane concern. Surviving are his widow and three children.

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20TH BOMBARDMENT SQUADRON HAS ITS INNING

The 20th Bombardment Squadron, GHQ Air Force, Langley Field, Va., finally received their first B-17, and lost no time in getting the squadron insignia painted on its nose, and the tail decorated with a fine large number 50. The crew of this airplane consists of the following officers and enlisted men: Major V.J. Meloy, pilot; Lieuts. A.H. Rogers, co-pilot; F.E. Glantzberg, navigator; Tech. Sgt. A.L. Wheeler, crew chief; Pvts. 1st Cl. C.D. Lake, radio operator, P.C. Salconi, T. McNutt and Pvt. J.E. Colbert, gunners.

COOLING FACTOR IN AIR COOLED-ENGINES

By the Materiel Division Correspondent

With increase in horsepower output of our newer air-cooled engines, the cooling of the engine now approaches the paramount position in the minds of our engineers. In order to obtain uniform and fair comparisons of various engine-airplane combinations, some cooling factor for a typical engine had to be determined.

Airplanes are accepted and tested throughout the entire year, and the temperature at Dayton varies from some twenty below to a "mint julep day" of one hundred in the shade. The question arises - if an engine-airplane combination cools in Dayton in January, will it cool in Texas in July? If cylinder temperatures rise to 200° from a basic cool air temperature of 30°, will they necessarily rise to 230° from a basic warm temperature of 60°, etc. Engineers, manufacturers, and the industry have various factors, no two of which agree. The Power Plant Branch consequently has been at a loss to referee definitely the complications that arise in research and competitive buying.

Although realizing that no two engine-airplane combinations will be exactly alike, comprehensive tests of a typical set-up would indicate the general trend and give a basic curve from which to start.

An A-17 airplane was picked as a typical air-cooled engine-airplane combination, and recently tests were conducted from the extremes of the localities of Minneapolis and St. Paul, Minn., to Miami, Florida, at various altitudes, various temperatures and mixture settings. The data gathered are in the process of analysis, and it is hoped that a definite, or at least a practical factor, may be reached in engine calculations.

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ANOTHER B-17 for 49TH BOMB. SQUADRON

The following crew was recently ordered to Seattle, Wash., to take delivery of the second B-17 Bombardment airplane for the 49th Bombardment Squadron, GHQ Air Force, Langley Field, Va.: Major C.V. Haynes, supervisor; Captain C.W. Cousland, pilot; 1st Lieut. J.S. Mills, co-pilot; Technical Sergeant W.W. Fry, crew chief; Staff Sergeant J.A. Piper, assistant crew chief and Sergeant G.R. Charlton, radio operator. Says the News Letter Correspondent: "The Boeing plant has speeded up production, and we understand we will have all thirteen of the B-17's before many months roll by.

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THE ANNUAL SPRING HORSE SHOW AT MAXWELL FIELD

THE annual Spring Horse Show, and one of the most colorful in recent years, was held in the "Riding Ring" immediately in front of beautiful Austin Hall at Maxwell Field, Ala., on Saturday morning, April 24th, with a large crowd, including visitors from Montgomery and surrounding cities, Barksdale Field, La., and Pensacola, Fla., on hand.

Under the spell of the beautiful music rendered by the Naval Air Station Band, the show got "under way" promptly at 8:00 o'clock with the Children's Hack Class, consisting of 23 entrants, riding into the ring. This class was open to all children of the Senior Riding Class at the Field and was won by Miss Louise Owens, riding "Hisso," who received a trophy and ribbon. Second place was captured by Sunny Martenstein, riding "Dixie," who received a ribbon, and third place was won by Elwood Garrett, riding "Molly."

Grooming competition followed, and awards were made to Privates Cheek, Kline, and Lewis, of the Headquarters Squadron, who won first, second and third places, respectively.

The Children's Hack Class, open to all children of the Junior Riding Class, followed, and of the 13 entrants, Nancy Hackett, riding "Texas," captured first honors and the beautiful trophy. Second place went to Arrie Tomberlin, riding "White Bottom," and third to Jack Laird, riding "Dixie." All were awarded ribbons.

The next event was the Children's Jumping Class, with eleven entrants. Bobby Bartron, on "Billy," captured first honors and the trophy, followed closely by James Garrett on "Hisso" and Jane DeFord, riding "Dusty." All were presented with ribbons.

The Officers' Chargers followed. Horses were shown at walk, trot and canter, and first place with the trophy went to Captain Ralph F. Stearly, riding "Stony Ford." Second honors were won by Lieut. Clayton E. Hughes, riding "Richard K," and third place was won by Lieut. Joseph G. Hopkins, riding "Dixie." All received ribbons.

Private Mount Class was the next event, which was also captured by Captain Ralph F. Stearly on his "Stony Ford," with second honors being won by Lieut. Bennett W. Wright, USN, and third honors going to Lieut. Carl R. Storrie on "Berk Boy."

The next event of the Show, "Pairs of Road Hacks," drew the special interest of the spectators as the many couples came riding into the ring. Major Morill Ross, Field Artillery, riding "Pivot," and Mrs. S.A. Blair, riding "Dolly," captured first honors and the trophy. Secon ribbon went to Captain Joe Smith, riding "Stony Ford," and Mrs. Ralph F. Stearley, riding "Fairy Story," and third ribbon was awarded Lieut. Storrie on "Nig," and Mrs/ William H. Powell, riding "Dusty."

Open Jumping, one of the most exciting events of the Show, was next on the program, with a very large list of entrants. Mrs. Garrett captured first place in this event and the trophy, with Captain R.G. Harper second and Captain C.W. Davies third ribbon.

The Ladies' Hack Class, riding in competition for the Maxwell Field Woman's Club Trophy, followed. This event was open to all members of the Ladies' Equitation Classes, and horses were shown at the walk, trot, canter and other movements as directed. Mrs. S.A. Blair, riding "Kentucky," captured the important trophy and first ribbon in the event. Second honors were won by Mrs. Ralph F. Stearley, on "Stony Ford," and third place went to Mrs. Kenneth C. McGregor, riding "King."

Following this event, awards were presented to the members of the Ladies' Riding Class who were picked as showing the most improvement during the class year, and Mrs. Ralph F. Stearley was awarded first honors in this class. Second ribbon went to Mrs. H.S. Hansell, Jr., with third place being awarded Mrs. F.F. Everest, Jr.

Hunt Teams of Three then took to the course and went through their plentiful supply of jumps at a hunting pace in tandem. The team composed of Mrs. R.L. Creed, Lieut. B.W. Wright and Mrs. Garrett captured first honors in the event. Second ribbon went to the team comprising Captains E.W. Barnes, R.W. Harper and W.E. Whitson, and third ribbon to the team of Captains B.J. Peaslee, C.W. Davies and Lieut. J.G. Hopkins.

Preparations were then made for the Polo Bending Race which immediately followed. This event was open to all, and horses were run through a series of stakes, alternately passing them on the right and left. Knocking down a stake or failing to pass the stakes correctly resulted in disqualification. Riders carried polo mallets, and first ribbon and the trophy was awarded to Lieut. B.W. Wright, U.S. Navy, riding "Peggy." Second ribbon went to Captain Stearley on "Stony Ford," and third honors to Mrs. F.W. Evans, riding "White Bottom."

The last event of the Show, "Musical Chairs," open to all on the Post, was then called by the announcer. Over 20 entries responded, and that exciting event got under way. Elimination followed gradually until Jack Lunday, Bobby

George and Margaret Hackett were left in the ring. Jack Lunday was the first to fail in getting his chair and was eliminated, winning third ribbon, followed by Bobby George, who failed on the second attempt, leaving Margaret Hackett her chair and the trophy.

During the Show, the Ladies' Riding Class presented a ten-minute silent drill which was acclaimed the most interesting event on the program. Under the supervision of Major Richard L. Creed, Cavalry Instructor at the School, and Mrs. Creed, also an ardent horsewoman, the Ladies' Riding Class performed with well ordered effectiveness, executing the delicate movements abreast and in perfect silence.

Following the Show, in appreciation of the many hours of patient instruction and much effective help furnished the classes, Major and Mrs. Creed were presented with a gift of appreciation from the Ladies' Class. The Children's Riding Classes also presented Captain Henry L. Kinnison, Mrs. Frederick W. Evans and Mrs. William H. Powell, instructors, with gifts of appreciation for their untiring work with the classes throughout the year.

Music was furnished throughout the colorful show by the Naval Air Station Band, and a most enjoyable day was acclaimed by the large crowd witnessing the show.

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THE CREEDS WIN MANY HONORS IN HORSE SHOW

Horse Show teams from Fort McPherson, Ga.; the Alabama Polytechnic Institute at Auburn; from Maxwell Field, Ala., and the many participants from the Infantry School made keen competition in the 15th Annual Horse Show, held at Fort Benning, Ga., during the period April 29th to May 1st.

Representatives from Maxwell Field who participated in and placed in the following classes were:

"Individual Polo Pony Class" - won by Major Richard L. Creed, riding "John Chip" and third place in the same event was won by Major Creed, riding "John Milliken."

"Polo Pony Stake Race" - won by Major Richard L. Creed, riding "John Chip."

"Dressage Class" - won by Major Richard L. Creed, riding "Berk Boy."

"Teams of Three Polo Ponies" - won by Major Creed, Lieuts. Clayton E. Hughes and Bennett W. Wright.

"Championship Polo Pony Class" - won by Major Creed, riding "John Chip."

"Pairs of Road Hacks" - second place, won by Major and Mrs. R.L. Creed, riding "John Chip" and "Berk Boy."

"Ladies Hack Class" - won by Mrs. R.L. Creed, riding "Berk Boy."

All four entrants from Maxwell Field returned with beautiful trophies won at the Show, and with the "Championship Polo Pony Class" in the bag which, incidentally, is one of the much coveted championships at the Show. The Tactical School competitors feel justly proud of their Equitation Instructor, Major Richard L. Creed, who has done so much for all of the enthusiastic horsemen at the Field and who really brought home the "bacon" in the Benning Show this year.

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MANEUVERS AT VALPARAISO, FLA.

The 1936-1937 Class at the Air Corps Tactical School, Maxwell Field, Ala., completed one week's maneuvers at the Valparaiso Bombing and Gunnery Base at Valparaiso, Fla., on May 2nd.

The movement was made from Maxwell Field to the Valparaiso Base by airplanes on the afternoon of April 25th. P-12 type airplanes were used for fixed gunnery firing during the maneuvers. A-17 airplanes were used for flexible gun firing. The O-19 and O-45 airplanes were used for towing targets. The B-6's were used for navigation missions.

The daily gunnery schedule required each student of the section firing to fire three ground target missions and two tow target missions. The average number of daily missions was 230.

During these maneuvers, the officers were quartered in tents at the Valparaiso Bombing and Gunnery Base, and in the temporary cabins erected at White Point. The enlisted men were quartered in the Barracks at the Valparaiso Bombing and Gunnery Base, with the excess from this station quartered in tents.

All flying operations were conducted in accordance with flying regulations of Maxwell Field, where they applied on the Valparaiso airdrome, and in accordance with the provisions of the school operations order published for the maneuver. Two-way radio contact between the tow target airplane and the ground station was established every ten minutes.

All dispatching of airplanes from the gunnery base was done by an officer, using the public address system. In this manner there was no lost motion in accomplishing missions or any congestion of traffic. The flying line and airplanes were maintained by 45 enlisted men from the Engineering Department at Maxwell Field.

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Lieut. Colonel William C. Ocker (Major), Air Corps, of Brooks Field, Texas, is under orders to proceed to Barksdale Field, La., for duty, reporting not later than June 15, 1937.

WASHINGTON OFFICE NOTES

Brigadier General Henry C. Pratt returned to Maxwell Field, Ala., with his Aide (1st Lieut. Dwight B. Schannep) on May 12th, following temporary duty in the Chief's Office.

Officers leaving for the March Field Maneuvers were Major General Oscar Westover and Capt. Luther S. Smith on May 7th, Colonel H.H.C. Richards on May 8th, and Lieut. Colonel Gerald E. Brower on May 10th.

Major Edward V. Harbeck, Jr., and Capt. Donald F. Stace departed May 10th on leave of absence.

Officers who arrived in the Chief's Office early in May for temporary duty were Lieut. Colonel Erwin B. Lyon, from Randolph Field; Major Milo McCune, from Barksdale Field; Major Hugh A. Bivins, Captain Clarence S. Irvine and 1st Lieut. Daniel C. Doubleday, from Wright Field; Major James T. Hutchison and Captain Randolph P. Williams, Langley Field; Captain Harrison G. Crocker, Maxwell Field, and Captain Ray H. Clark, Chanute Field.

Major William B. Souza returned April 28th from leave of absence, and on May 5th departed on an inspection trip.

Officers from other stations who were in the Chief's Office recently for conference were Major C.F. Wheeler, 1st Lieuts. Pearl H. Robey and James L. Jackson, April 28th, from Wright Field; Captain James B. Haddon, from the Air Corps Tactical School, Maxwell Field, Ala., on May 4th; and Major Otto G. Trunk, from Langley Field, Va., on May 12th.

Colonel Alfred H. Hobley and Major Leland W. Miller left for Wright Field on May 11th.

Colonel Rush B. Lincoln returned April 29th from leave of absence.

First Lieut. H.F. Gregory returned to his station, Fort Sill, Okla., May 6th, after being on temporary duty in the Chief's Office.

Lieut. Colonel Howard C. Davidson left for Wright Field, May 2nd, for conference.

Visitors to the Chief's Office were Major Bernard S. Thompson, Hensley Field, Texas, April 28th, during the course of a navigation flight; 1st Lieut. John J. O'Hara, Jr., Brooks Field Texas, enroute to Panama; and Major Arthur Thomas, Instructor, Missouri National Guard Air Corps, May 10th, enroute to New York.

Lieut. Colonel William E. Lynd returned May 3rd from the Medical School at Carlisle, Pa., where he delivered a lecture.

Major Karl S. Axtater returned May 6th from an inspection trip to Randolph, Brooks and Kelly Fields.

Major Morton H. McKinnon returned May 9th from Wright Field, where he was on temporary duty.

Captain Evers Abbey left May 10th for Wright Field, and Kansas City, Mo.

Majors Alfred W. Marriner, Arthur E. Easterbrook and James A. Mollison returned from conferences at the Tactical School; the Air Corps Training Center; Ft. Leavenworth, Kansas; and Wright Field, relative to personnel and training.

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WAR DEPARTMENT ORDERS
Changes of Station

To March Field, Calif.: Major Paul H. Prentiss (Captain) from Randolph Field; 1st Lieut. Budd J. Peaslee, upon completion of present course of instruction at Air Corps Tactical School, Maxwell Field, Ala.

To Mitchel Field, N.Y.: Major Phillips Melville, upon completion of tour of duty in Hawaiian Department.

To Selfridge Field, Mich.: Lieut. Colonel Clinton W. Howard, upon completion of present course of instruction at Army War College; Major Joseph H. Davidson, upon completion of present course of instruction at Command and General Staff School, Fort Leavenworth, Kans.

To Barksdale Field, La.: Major Auby C. Strickland and Captain Milo N. Clark, from Randolph Field, Texas.

To Langley Field, Va.: 1st Lieut. H.F. Gregory, from Fort Sill, Okla., for duty with 3rd Observation Squadron.

To Wright Field, Ohio: 1st Lieut. Samuel O. Redetzke, upon completion of present course of instruction at Air Corps Engineering School.

To Fort Riley, Kansas: Captain Jack Greer, from Langley Field, Va.

To Duncan Field, Texas: 1st Lieut. Thomas B. McDonald, upon completion of present course of instruction at Air Corps Engineering School, for duty at San Antonio Air Depot.

To the Philippines: Captain Frederick A. Bacher, Jr., from duty as Instructor, A.C. Primary Flying School, Randolph Field, Texas.

To Hawaiian Department: 1st Lieut. Sory Smith and 2nd Lieut. Edward S. Allee, upon completion of present course of instruction at Air Corps Technical School, Chanute Field, Ill.

To Washington, D.C.: Lieut. Colonel William E. Farthing (Major) upon completion of present course of instruction at Army War College.

To Pasadena, Calif.: 1st Lieut. John B. Ackerman from Maxwell Field, Ala., and 1st Lieut. Thomas S. Moorman, Jr., from Mitchel Field, N.Y., to take course of instruction in mathematics and meteorology at the California Institute of Technology.

To Nashville, Tenn.: Major James L. Grisham (Captain) from March Field, Calif., for duty as Instructor, Air Corps, Tennessee National Guard.

Retirement: Lieut. Colonel Edward L. Hoff Maxwell Field, Ala., May 31, 1937, for disab ity incident to the service.

Resignation: 1st Lieut. Douglass Thompson Mitchell, Air Corps.

AIR CORPS NEWS LETTER

F. C. BARRY

ISSUED BY
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VOL. XX AIR CORPS NEWS LETTER NO. 11.

Information Division
Air Corps
June 1, 1937
Munitions Building
Washington, D.C.

The chief purpose of this publication is to distribute information on aeronautics to the flying personnel in the Regular Army, Reserve Corps, National Guard, and others connected with aviation.

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THE GENERAL HEADQUARTERS AIR FORCE EXERCISES

THE GHQ Air Force, with the 63rd Coast Artillery (Anti-aircraft) attached, concentrated in the Hamilton Field - March Field areas and conducted operations therein during the month of May, 1937. The Primary purpose of the exercise was to test the full-strength organization of the various units of the General Headquarters Air Force as set up in tentative test tables of organization.

In planning for this exercise, it was apparent to Major General Frank M. Andrews, the Commanding General of the General Headquarters Air Force, that before any real test of organization could be made it would first be necessary to assemble full strength units of all types of aviation assigned to the GHQ Air Force and then to operate them under conditions as nearly approaching those which might be expected in war.

It was also apparent from the beginning that, although this was to be primarily a test of the soundness of organization, other characteristics, inherent in an air force which is capable of being at all times ready for immediate action, would also undergo test. Among these characteristivs are: high mobility; efficient supply; and proper training.

The following units, composed and located as follows, engaged in the exercise:

Advance Echelon, Hq. GHQ Air Force, at March Field, Calif.

15 officers, 22 enlisted men, 8 airplanes of various types.

Headquarters, 2nd Wing, at Hamilton Field, Calif.

8 officers, 25 enlisted men, 8 airplanes of various types.

Headquarters, 1st Wing, at March Field, Calif.

11 officers, 70 enlisted men, 2 airplanes of various types.

Headquarters and Headquarters Squadron, 7th Bombardment Group, at Fresno, Calif.

13 officers, 81 enlisted man, 3 B-10B airplanes (Martin bi-motored Bombers).

9th Bombardment Squadron at Fresno, Calif.

30 officers, 163 enlisted men, 13 B-10B airplanes (Martin bi-motored Bombers).

31st Bombardment Squadron at Stockton, Calif.

30 officers, 163 enlisted men, 13 B-10B airplanes (Martin bi-motored Bombers).

32nd Bombardment Squadron at Merced, Calif.

30 officers, 163 enlisted men, 13 B-10B airplanes (Martin bi-motored Bombers).

Headquarters and Headquarters Squadron, 3rd Attack Group at Bakersfield, Calif.

12 officers, 78 enlisted men, 5 A-17 airplanes (Northrop single engine attack).

90th Attack Squadron, Bakersfield, Calif.

30 officers, 177 enlisted men, 28 A-17 airplanes (Northrop single engine attack).

34th Attack Squadron at Visalia, Calif.

30 officers, 177 enlisted men, 28 A-17 airplanes (Northrop single engine attack).

13th Attack Squadron at Delano, Calif.

30 officers, 177 enlisted men, 28 A-17 airplanes (Northrop single engine attack).

Headquarters and Headquarters Squadron, 1st Pursuit Group at Muroc Dry Lake, Calif.

12 officers, 78 enlisted men, 5 PB-2 airplanes (Consolidated bi-place Pursuit).

27th Pursuit Squadron at Muroc Dry Lake.

30 officers, 143 enlisted men, 28 PB-2 airplanes (Consolidated bi-place Pursuit).

94th Pursuit Squadron at Muroc Dry Lake.

30 officers, 133 enlisted men, 28 P-26 airplanes (Boeing single seater Pursuit)

55th Pursuit Squadron at Muroc Dry Lake.

30 officers, 133 enlisted men, 28 P-26 airplanes (Boeing single seater Pursuit)

88th Reconnaissance Squadron at Hamilton Field, Calif.

9 officers, 88 enlisted men, 6 airplanes of various types.

Hamilton Field Air Base.

19 officers, 460 enlisted men, miscellaneous airplanes.

March Field Air Base.

24 officers, 469 enlisted men, miscellaneous airplanes.

63rd Coast Artillery (AA) at Muroc Dry Lake, Calif.

22 officers, 600 enlisted men, .30 and .50 caliber machine guns, 3-inch AA guns, sound locators and searchlights.

In rough figures, the men and airplanes engaged in this maneuver totalled 425 officers and flying cadets, 3400 enlisted men and 260 airplanes.

The Concentration: Since none of the

GHQ Air Force units stationed throughout the country were operating on a full strength basis - some squadrons consisting of one flight, some of two flights - it was necessary to deplete all of the units not engaged to practically inoperative status in order to bring the Bombardment, Pursuit and Attack Groups engaged in this exercise to full strength. Men and airplanes from Langley, Mitchel, Selfridge, Barksdale and the West Coast Air Bases were concentrated to accomplish this organization. The 88th Reconnaissance Squadron was not brought up to full strength for several reasons, an important one being that the GHQ Air Force reconnaissance squadrons are not yet equipped with a standard type airplane and no true test of organization could be attained if a single squadron was required to operate and maintain the many different types with which these squadrons are at present equipped.

The period May 1 to May 9 was devoted to the concentration.

The combat airplanes, manned by their crews, converged on their operating airdromes with great rapidity, most of them arriving at their destination within 48 hours after departing from home stations. These units made daily flights during the remainder of the concentration period in order to familiarize themselves with the terrain over which they would be operating during the ensuing few weeks.

The ground echelon of technical personnel and supplies was moved into the operating area by air, rail and motor transportation and assembled much slower than the combat airplanes and crews.

A provisional Air Transport Squadron, composed of 11 Douglas and two Lockheed Transport airplanes, comprised the air transport component for the ground echelon. As there were an insufficient number of air transports in the Army Air Corps to bring the ground echelon into the maneuver area in a single trip, it was necessary to operate an airplane shuttle service back and forth across the country until the last man and the last item of supplies were landed at the maneuver airdromes. This shuttle service occupied the period, May 1st to 10th. The crews of some of these Transport planes flew as many as 100 hours in ten days. The Air Transport Squadron was inactive from the completion of the concentration to the start of the evacuation on May 22nd. In the interim, some of the Transport planes were released to their home stations while others were turned over to the March and Hamilton Field Air Bases to provide air transport service between the Air Bases and the outlying airdromes during the tactical period.

Recalling memories of World War days, a troop train carrying men and supplies departed from Barksdale Field on May 1st, made a stop at March Field to take on additional passengers, and discharged its load at Muroc, Bakersfield, Delano and Fresno.

All men and supplies not transported by air or rail were moved to their maneuver stations by motor convoy. This mode of transportation was used for the comparatively short hauls between the West Coast bases and the dispersed airdromes.

The Operating Period.

Tactical Operations began on May 10th and ended on May 21st. Each unit engaged in the exercise was assigned to either the defending force or the attacking force.

The opposing units consisted of:

1st Wing (Defending Force)

1st Wing Headquarters located at March Field.

1st Pursuit Group located at Muroc Lake (all Squadrons).

63rd Coast Artillery (Anti-aircraft), located at Muroc Lake.

The March Field Air Base.

2nd Wing (Attacking Force)

2nd Wing Headquarters located at Hamilton Field.

7th Bombardment Group with squadrons located at Fresno, Merced and Stockton.

3rd Attack Group with Squadrons located at Bakersfield, Delano and Visalia.

88th Reconnaissance Squadron located at Hamilton Field.

The Hamilton Field Air Base.

The Advance Echelon of Headquarters, GHQ Air Force, was not an operating agency during the tactical period. It did, however, prescribe the situations in order to control the operations and direct them along lines which would assure that maximum benefit could be derived from the short time available. The issuance of all detailed orders and instructions, the tactical employment of all weapons, and all other necessary details were left to Wing and subordinate commanders. Copies of all such orders and instructions were furnished to Headquarters, GHQ Air Force, with minimum delay.

Muroc Dry Lake and vicinity was assumed to be the City of Los Angeles, with its airplane factories, docks, harbors and other facilities. This site was selected as the defended area because it offered the opportunity to conduct actual bombing and chemical operations. Targets representing the facilities and installations of this metropolis were outlined with lime on the sands of the Lake, and it w at these objectives that the opposing Bombardment directed the force of its attacks.

Additional bombardment targets were erected on Great Salt Lake, Utah, where a few of the bombardment attacks were directed.

The 63rd Coast Artillery (AA) was disposed in the vicinity of the town of Muroc. These anti-aircraft defenses and the Pursuit encampment were targets for the opposing attack aviation.

Of noteworthy interest on the defensive side was the part played by the California Edison Company in manning the air intelligence net. An air intelligence net consists of a series of observation posts manned by ground observers located at considerable distances from the object of enemy air attacks. As enemy planes move into the intelligence net, ground observers report the location, number and type of airplanes, their altitude, direction of flight and the time they are observed. This information is rushed by the quickest means of communication available to the defense forces who prepare to engage the approaching planes before they can strike the target. Due to the shortage of army personnel and to the lack of funds with which to set up the elaborate communications net necessary to get complete coverage for the defended area, the defending force called upon the California Edison for assistance and received an enthusiastic response. The complete facilities of this Company were put at the disposal of the defending forces; many special wires were laid, and observation posts were manned by Company employees who telephoned vital position reports of the attacking aircraft to the commander at Muroc Lake. This cooperation was rendered without expense to the government and served to illustrate a procedure which will be followed in actual warfare. Tomorrow's aircraft will strike with such startling rapidity that the successful defense of our vital areas will depend largely upon the assistance of this kind which patriotic citizens can render.

As a double check, to insure that the defending force received warning of an approaching attack, each combat unit or single airplane of the attacking force reported its position by radio as it entered the area covered by the net.

Aerial camera guns were used in lieu of machine guns. Smoke screens were laid to reduce the effectiveness of the anti-aircraft fire against the attacking forces of Bombardment aviation. Lime water and tear gas were used to teach the ground forces how to protect themselves from gas attacks.

All of the problems were designed to conform to actual war methods as far as conditions would permit. Two four-hour periods out of each 24 hours were the average operating periods. However, some squadrons, especially Bombardment, flew as much as 15 hours in a single day. Some missions were performed during daylight while others involved night operations. All sorts of weather conditions were encountered.

Valuable lessons were learned about each of the following subjects:

Tactical employment of Bombardment, Pursuit and Attack Aviation,

Coordinated Bombardment and Attack aviation,

Coordinated Pursuit and Anti-aircraft action,

Bombing proficiency,

Aerial gunnery proficiency, using camera guns,

Pursuit interception,

Illumination of Bombardment aircraft by Coast Artillery searchlights to assist Pursuit interception.

Proficiency of Attack Aviation in neutralization of anti-aircraft artillery by use of smoke and chemicals.

Effects of gas on morale.

Effects upon efficiency of personnel when wearing gas masks,

Gas alarm system,

Airdrome defense,

Practicability of extent of Air Intelligence Net,

Combat Intelligence training,

Illumination of Bombardment targets by reconnaissance units.

The Deconcentration

The deconcentration period began on May 22nd and ended May 30th, and might be called the "Concentration in Reverse." Units were moved to their home stations by the same means of transportation as had been employed to concentrate them. As soon as the air combat units pulled out of their airdromes, air base personnel dismantled the tent cities, loaded remaining equipment and supplies and proceeded to the home bases.

In conclusion, it might be well to say a word about the role played by the March Field and Hamilton Field air bases during the exercise, for, after all, this GHQ Air Force exercise was a test of these bases just as much as it was of the air combat units.

The spectacular side of GHQ Air Force operations is the flying, shooting and bombing. Few people stop to realize the huge amount of ground effort incident to "keeping the airplanes and combat crews in the air."

An air base comprises the installations and facilities required by and provided for the operation, maintenance, repair and supply of a specific air force, and as a rule covers a considerable area, especially if the installations and facilities must be orderly dispersed because of terrain, security and other considerations.

A typical Air Base comprises an airdrome together with permanent shops, warehouses, communications and other necessary facilities. It includes, in addition, such necessary auxiliary airdromes as can be serviced by the base.

An Air Base exists for the primary purpose of providing the services necessary for the operations of combat units. It must provide clothing, food, shelter, bombs, ammunition, spare parts, photographic laboratory facilities, fuel, light, heat, maintenance engine crews, hospitalization, weather service, radio, teletype and telegraph facilities, mail service, police service and a million and one other things. It can be seen that the GHQ Air Force must depend upon a large ground component of technical personnel, supplies and equipment in order to carry on sustained operations. Without the assistance of the ground echelon, the air echelon is as immobile as it would be without one drop of gasolime for its engines.

The GHQ Air Force was fortunate in having two fine air bases in California capable of meeting the demands placed upon them by the air combat units. It is not as fortunate in other sections of the country; however, a bill passed by our Congress authorized bases in important areas in the continental United States, and the War Department Appropriations Bill, now before Congress, carries an item for the construction of another base in the Pacific Northwest, near Tacoma.

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ARTILLERY FIRING AT CAMP STANLEY

The 22 students of the Observation Section of the Air Corps Advanced Flying School, Kelly Field, Texas, have just completed their course in Observation of Artillery Fire. The Ground School course was conducted by Captain R.E. Randall, instructor, and lasted for 24 recitation hours. This was followed by simulated artillery fire on the Kelly Field miniature range. In this phase of the training, each student had a minimum of ten problems to familiarize him with the procedure of artillery adjustment. The next phase was adjustment of simulated artillery fire on the puff target range, where bursts were simulated by smoke puffs and observed by the students at 4,000 feet. Two-way radio communication was used.

On April 28th, the adjustment of actual artillery fire was begun. Captain J.C. Strickler, Commanding "B" Battery, 15th Field Artillery, gave a lecture on artillery firing and a demonstration with the students at the battery position.

An instructor team of Lieut. J.C. Covington, observer; Lieut. E.R. Todd, pilot, demonstrated three problems in aerial artillery adjustment. At the conclusion of this demonstration, some additional excitement was furnished in the form of two 10-foot*rattlesnakes which were found near the battery position and promptly dispatched without the aid of field pieces.

Following the demonstration, the student began to fire problems, 124 separate problems being fired. Each student fired a problem of the following types:

Bracket prearranged.

Lay-on-Me (airplane flying the gun target line to locate the target).

Problem using a reference point.

Problem using ladder brackets with smoke shell, followed by a changed target problem using one gun for precision adjustment on the target.

Problem in which the target was designated by map coordinates by the battery commander, allowing the student to shift to a target requiring battery precision.

A total of 1289 rounds was fired. The firing battery was commended by the Air Corps instructors on its firing efficiency and the accuracy of its laying. All communication was two-way radio.

The ground radio station was operated by Corporal Guthrie and Private Chedester both of the 12th Air Base Squadron.

The Air Corps instructors were Captain R.E. Randall, Chief Instructor; Lieuts. S.E. Anderson, J.C. Covington, E.R. Todd, W.L. Kennedy and E.J. Timberlake.

*Ed. Note: According to an authority on reptiles in the State of Texas, the largest rattler discovered in the Lone Star State measu[illegible] seven feet, and that was way back in 1888. He states that they don't grow even that long nowadays, averaging about five feet in length.

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BUGLE CALLS WITHOUT BUGLERS

The Mitchel Field Control Tower Operator has taken over the duties of the Base Buglers. By means of a phonograph with a crystal pickup, an amplifier and two high quality loud speakers, bugle calls having exceptional clarity and perfectio are played. The loud speakers are located on the Headquarters Building, and the calls can be heard over the entire base area.

An added feature - March Music - is played four times daily, while squadrons are marched to and from work on the line. The "Star Spangled Banner" is played for Retreat and daily, except in inclement weather. When reviews are scheduled, troops march to the strains of the best bands in the land.

The only complaint has been that reveille is much too penetrating and sleep-dispersing.

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During the month of April, the Engine[illegible]ing Department of the San Antonio Air Depot, Texas, overhauled a total of 18 airplanes and 66 engines, and repaired 40 airplanes and 36 engines.

INTERNATIONAL LAWYERS AROUSED OVER AIRCRAFT

By Captain Corley McDarment, U.S. Army, Retired.

AIRPLANES have written a great question mark in the troubled skies of international law as well as modern warfare," declared Dr. John H. Spencer, youthful member of the U.S. State Department, in a talk before the annual meeting of the American Society of International Law at the Carlton Hotel, Washington, D.C., April 30th. Dr. Spencer should know about such matters. Before joining the State Department, he was legal advisor to the Emperor of Ethiopia who, it will be remembered, made a better fight in the halls of Geneva than on the plains of Abyssinia.

Born in Iowa, but schooled in the universities of Germany and France, Spencer continued to give legal advice to the "King of Kings" at Addis Ababa until May 5, 1936. The victorious Italians entered the city May 7th! Spencer escaped amid a hail of machine gun bullets and the reverberation of aerial bombs.

Being in the country during the conflict, Dr. Spencer had an excellent opportunity to observe the effects of aerial warfare upon the civilian population and to note some startling gaps in international law caused by airplanes. Speaking before the assembled international lawyers in Washington on "The Legal Aspects of Aircraft in Belligerent Operations," Dr. Spencer said:

> "Behind the lines is where the airplane is the greatest weapon. Low flying airplanes decimated whole herds of cattle, destroying the morale of soldiers and civilians alike. On market days, when herds were collected, the greatest damage was done. The market days had to be discontinued."

Dr. Spencer said that the gas bombs which the Italian aviators dropped had only a limited effect, but when the gas was released as a spray in the air, havoc resulted. Soldiers and civilians were partly blinded, livestock was sickened and water rendered unfit for use.

It is a violation of Article 25 of The Hague Agreement of 1907 to fire upon undefended towns, Red Cross units and ambulances. But the Ethiopian Government officially reported fifty cases of aerial machine gun and bombing attacks upon undefended towns and at least 18 such attacks upon Red Cross units and ambulances, by the Italians. But the fine question for international law to redefine is what is an "undefended" town? Does a single inhabitant blazing away at a hostile airplane change the status of a town from "undefended" to "defended," thus giving airplanes the right to fire and bomb at will? True, a single lucky shot from a rifle may bring down an airplane. But one set of figures showed that the percent of hits from regular anti-aircraft guns during the World War was only .75 of one percent. And some authorities would consider five percent hits high for the best anti-aircraft batteries today. Nevertheless, one man with one rifle and one bullet may bring down an airplane, and hence is a potential "defender" of a town. At least the Italians apparently thought so and bombed accordingly.

The Ethiopian Government gave orders for towns not to fire upon passing airplanes, lest retaliatory attacks be made. But there was no effective way to prevent herdsmen near the edge of a town, or over-zealous citizens from taking pot shots at passing planes. The natural impulse of the aviators was to return a spray of machine gun bullets or drop a few bombs in the general direction or vicinity of where they believed the hostile fire originated.

Under strict interpretation of international law, towns so lightly defended against aircraft would be classed as "undefended" - yet there is just enough doubt to give belligerent aircraft an open door.

In the bombing of ambulances and Red Cross units, the Italian aviators claimed they were often so close to the line of combat that no distinction could be made between them and other vehicles. Moreover, in bombing from high altitudes where accuracy was not so good, bombs may have fallen near or upon inviolable units when not intended. When ambulance crews thought they were being fired upon by airplanes, whether they were or not, they would open fire. This would give the airmen an excuse to return the fire.

And here enters another point for international law: When does an ambulance crew cease to be a noncombatant unit? For example, when the crew of an ambulance train has engaged fire with an airplane one day and placed itself upon a combatant status, is it still upon that status the next day when the plane returns? Internation law says "No." When an engagement has been definitely broken off and the forces withdraw, a new deal is on - a new game altogether has started. The airplane has no right to fire upon the ambulance train unless the crew first fires upon the airplane. But can aviators depend upon that? Can they afford to fly low over an ambulance train on the way to attack the fighting troops and trust that hostile fire will not be opened upon them today as it was yesterday? If the crew of that train was particularly active in its fire the day before, the airmen will have their own ideas as to the change of heart overnight. The next day may be another battle, but it is still the same war. There is enough doubt about the matter to make it a new problem for international law.

Another problem which international lawyers would like to doctor up, if possible, is the aerial attack, or battle, in which there is no follow up, and no attempt made to capture. This is the aerial attack made far behind the lines, sometimes hundreds of miles from the fighting lines. It is undoubtedly against noncombatants, and its effect can be only one of morale. Are such attacks fair? Attacks against munitions plants and railroad centers are undoubtedly fair and legal. If armed troops could land from airplanes and capture a town deep within enemy territory, no question of legality could be raised, but the "useless" attack, where no intention is made to capture, is another matter. Unrestricted use of aircraft in warfare hints at a fearful interpretation - a new philosophy of war. Instead of confining the conflict to armies, it is spread to civilians, including women and children, in the farther recesses of a country, and it even falls upon the unborn.

Another angle not sufficiently covered in international law is the case in which a hostile aviator is captured by irresponsible civilians far from the fighting lines and executed. Prisoners of war are entitled to certain rights under laws of warfare. But the law presumes the capture to be made by military personnel, or at least by constituted civilian authorities. What punishment, if any, should be imposed upon a country when one of its isolated natives has executed an aviator captured hundreds of miles from the fighting lines? The natural retaliation during the Italo-Ethiopian war was an attack against the section of the country where the illegal acts occurred. And while this may be the "human" thing to do, is it legal? Answering atrocity with atrocity leads into an abyss of barbarism which may engulf the whole of civilization.

What can international law do to humanize warfare in the face of rising air power? Dr. Spencer quite properly did not touch upon the moral issues of the Italo-Ethiopian War, but only the legal aspects presented by modern aerial warfare. However, it was with a serious face and grave voice that the scholarly Philip Marshall Brown, acting Chairman, arose after the address of Dr. Spencer and broke the awed silence with: "We have just heard one of the most significant talks of our times. One of the greatest problems before international law today is that question mark written in the sky - by airplanes."

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THE MANEUVERS AT ROCKY MOUNT, N.C.

The month of April was a busy one for the 2nd Bombardment Group. The entire unit moved to Rocky Mount, N.C., for the 2nd Wing Field Exercises, leaving only a detachment at Langley Field to handle the necessary work. The Exercises were very successful. The weather being ideal, the missions were run off in fine shape.

The final day of the camp included breaking camp and loading the trucks of the ground echelon and starting the motor convoy on the return trip to Langley Field. On the last day, the air echelon returned to Langley Field early in the morning for a demonstration for the Vice President of the United States and Members of Congress. Nine B-10B's and one B-17 participated in this demonstration. Bombs were dropped on the old bombing range.

The development program for the Y1B-17 was carried on as usual during the Wing Exercises, and the project is progressing rapidly.

49th Bombardment Squadron: After returning from the two weeks' sojourn at Rocky Mount, N.C., the organization had time to check equipment and get ready to move to the West Coast for the GHQ Air Force Concentration.

20th Bombardment Squadron: The Squadron finished an enjoyable and instructive two weeks in the field at Rocky Mount, N.C. The landing field was good, the camp site in Battle Park was excellent and the hospitality of the townspeople superb. The Squadron left Rocky Mount with regret, but promised to return.

21st Reconnaissance Squadron: The students of the Navigation School, conducted by this Squadron, participated in a small way in the Second Wing Field Exercises by making some very successful reconnaissance missions in the Middle Atlantic Sector for the purpose of locating enemy naval units. These missions indicate the importance of the work being accomplished by the Navigation Unit, both to the 2nd Bombardment Group and to the GHQ Air Force.

96th Bombardment Squadron:

Dear Pa:

The Ninety-Sixth (apologies to the 20th, 49th and 37th) again won another war. Place: Rocky Mount, N.C. When: April 12 to 24, 1937.

The first day found us in camp, very comfortably situated, you know, all the comforts of home; electric lights and heaters in tents, hot water, and radios. It looked more like amateur campers on a lark. That night we leaned back in our chairs around the camp fires, smoking, telling stories, and forgetting that we were ready for battle.

It started with a bang. Orders came

(Continued on Page 11).

A TIN ROOF IN JAQUE

By the News Letter Correspondent

To the casual traveler who now flies from Panama toward Rio and Santiago, the far reaching jungle will not only be broken by the welcome sight of an emergency landing field on Panama's Colombian border at Jaque, but a metal roof on the only modern building for hundreds of miles will be seen winking an invitation from the equatorial jungle at latitude seven degrees - 30 minutes north.

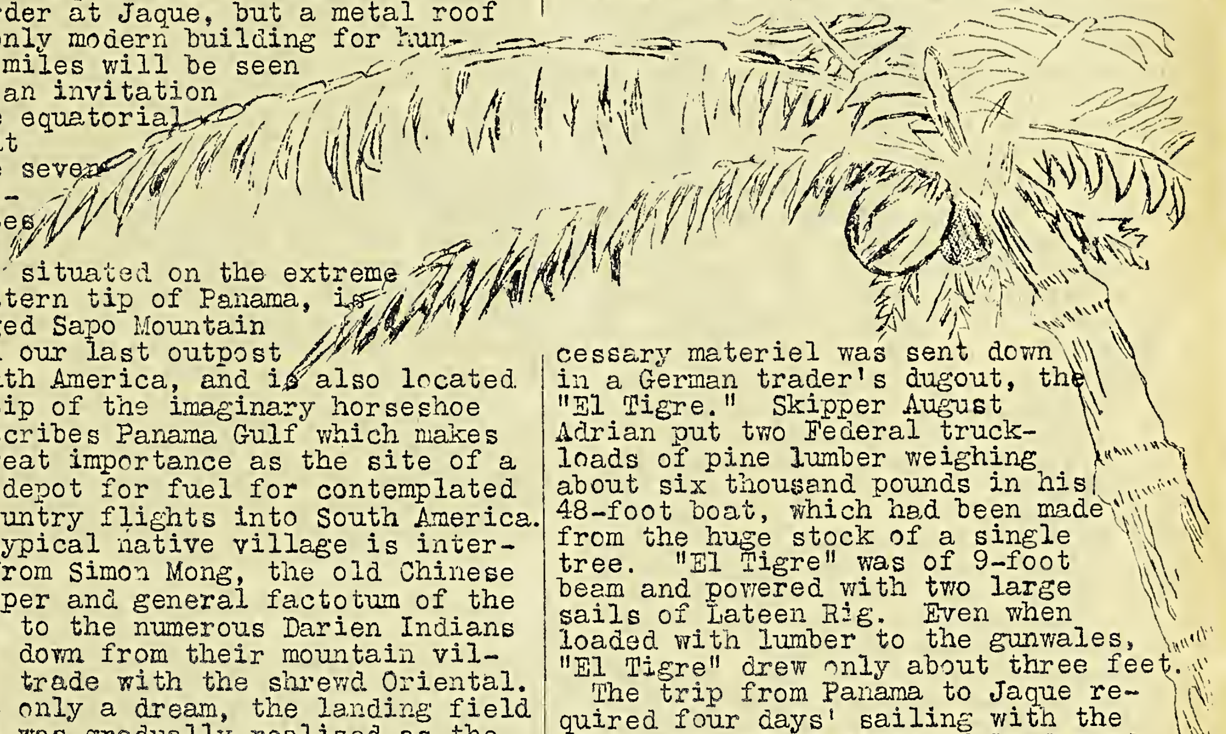
Jaque, situated on the extreme southeastern tip of Panama, is the rugged Sapo Mountain range in our last outpost near South America, and is also located on the tip of the imaginary horseshoe that describes Panama Gulf which makes it of great importance as the site of a storage depot for fuel for contemplated cross-country flights into South America.

This typical native village is interesting from Simon Mong, the old Chinese storekeeper and general factotum of the village, to the numerous Darien Indians who come down from their mountain villages to trade with the shrewd Oriental. At first only a dream, the landing field at Jaque was gradually realized as the 3,000-foot runway was reclaimed from the jungle by Indian labor.

As it became more or less commonplace to fly over the 160-mile water route to the Colombian border, the importance of a radio station began to be realized; also, as navigation flights far into South America became possible with the arrival of more modern flying equipment, a storage place for fuel became important as well as a house that might possibly be used as shelter in case of an overnight stop. Therefore, even though Jaque is situated far from the beaten track and well into the hinterland of Panama it still rivals El Volcan and Rio Hato in conveniences.

To construct a building on the Jaque field became quite a problem when it was considered that Jaque was 160 miles Southeast of Panama, which involved a flight in land planes over water that is so filled with coral reefs and submerged rocks that only the smallest boats can make regular runs through it.

Jaque is hundreds of miles from the nearest highway and, although that city will some day be very close to the proposed Pan-American Highway from Mexico City to Rio de Janeiro, that day is far into the future, as there now exists only thirty miles of road over a route that will by land be about three hundred miles, and most of that will be long bridges and mountain passes. Transportation by air and water was then the only solution, and water transportation only if native dugouts could be obtained.



First of all, the great bulk of the necessary materiel was sent down in a German trader's dugout, the "El Tigre." Skipper August Adrian put two Federal truckloads of pine lumber weighing about six thousand pounds in his 48-foot boat, which had been made from the huge stock of a single tree. "El Tigre" was of 9-foot beam and powered with two large sails of Lateen Rig. Even when loaded with lumber to the gunwales, "El Tigre" drew only about three feet.

The trip from Panama to Jaque required four days' sailing with the wind, and out of sight of land most of the distance. The worst part of his trip was in running through the reef from the Pacific into Jaque River. This required a waiting for 24 hours for the right time to shove hard with the poles, heave up with the foresail, and let the force of the Pacific sweep "El Tigre" into the calm waters of the river. After successfully landing, thirty Indians moved the material to the site of the building.

In the meantime, three of Keystone's best 6-A's were pressed into service along with the Bellanca, and used to transport the corrugated roofing, nails, cement, the balance of the lumber, and eight men along with enough water and provisions to last them until the next flight. These flights were made to Jaque almost every day during the construction and totaled 25 trips before the last coat of paint had been put on and the concrete piles wrapped with creosoted burlap to keep off the ants. These plane-loads with Adrian's boatload placed all of the material to be used in the construction work at Jaque, but as it was feared that the water supply at that village was impure, it was decided to run trips for water, fresh meat and provisions every day.

The construction moved along rapidly after the problem of supply had been accomplished, and the men pulled down the tent and moved into the best house in Darien Indian country in four days' travel. Windows, doors, screens, concrete foundations and steps, a front porch and all. Then the most amusing incident of the week occurred. On one of the early flights a Medical Corps man was sent down - Private Kelly - who soon made himself the most sought after man in Darien by his remedies for various maladies that quickly worked a cure which the witch doctors in the village had failed to effect. Kelly first cured an Indian of a very badly infected finger which had baffled the Indian doctor a long time. He experimented with quinine, made experiments to cure skin rashes and old cuts, etc. Whatever the result of Kelly's missionary work was, his stock is way up in that never-never-land. In two days after the first cure had been telegraphed via the grapevines to the other villages, the rivers contained a solid stream of Cayucas filled with Indians with everything from hangnails to toothaches. Kelly's cures must have worked, because to this day he is EL DOCTOR in that country and has received presents that include Ocelots, parkeets and earrings. The doctor, when he returned, also had blood specimens from every Indian in the country.

Now Jaque boasts of at least one modern building, and as soon as radio sets are available will no doubt have the first broadcasting station in Darien, as well as the first filling station, whether the highway is fifty years from completion or not. Perhaps some day away back in the USA we'll hear Radio Station HAR-K calling with some red-skinned crooner - Quien Sabe, for there is no telling there in the country of the Chucunaque and the Sapos, where the blow gun still is the weapon of prime defense and, even though very little is said about the subject, SHRUNKEN HUMAN HEADS from tribal enemies still are to be found.

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5TH COMPOSITE GROUP IN JOINT MANEUVERS

The annual Hawaiian Department Maneuvers, climaxed by 48 hours of intensive activity during the Concurrent Exercise with the U.S. Fleet, are a thing of the past. The period from April 12th, when the 5th Composite Group took the field, and April 25th, when the assembled "enemy" fleet made its final "assault" on the embattled shores of Oahu, was characterized by strenuous activity on the part of operations and communications personnel, as well as flying officers and combat crews. The Group played an important part with its new (in Hawaii) Martin Bombers, performing several missions of over four hours each and pushing far to sea the powerful bombardment arm of the Wing Commander, Brigadier General Barton K.Yount.

A humorous slant on the grim game was introduced when the enemy, having discovered the Group Command frequency, endeavored to confuse operations by "yammering" interference and fake orders. Not having the proper means of authentification, their efforts deceived no one, and radio frequencies were promptly changed. Moreover, it was demonstrated that the game can be played both ways when Lieut. Daniel A. Cooper, the Group Communications Officer, using the old frequency, ran some totally imaginary missions, apparently followed closely by the enemy, judging by his efforts to interfere.

While the War was devoid of umpires and the results may therefore never be known, the 5th Group played a significant part and takes great satisfaction in the generous commendation issued by the Department and Wing Commanders.

The cessation of hostilities only marked a change in activities for the Group, for it started making preparations for the annual Department Commander's Inspection, beginning May 12th, as strenuously as it fought in the late unpleasantness.

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PARACHUTE MAN LEAVES MAXWELL FIELD

As his parting gesture after almost four years in the Army Air Corps, Marion F. Davidson, Jr., 13th Air Base Squadron, Maxwell Field, Ala., applied for and received permission to perform his fifth parachute jump on the morning of May 7th, the date upon which he was leaving the military service.

He was accompanied on the trip in one of the B-6 Army Bombing planes by Private Frank S. Stovall, also of the 13th Air Base Squadron. Upon reaching their proper altitude for the jump, both leaped from the plane. Davidson landed on the edge of the field, but Stovall missed the field and landed in the center of the Alabama River which runs along the north boundary of Maxwell Field.

Lieut. Marion Huggins, pilot of the Bombing plane, seeing Private Stovall's plight, circled the spot, flying low to attract attention. Davidson, sensing the danger, raced to the river, and leaping into the swift rushing water swam to Private Stovall's assistance. Both being strong swimmers, there was little danger to either, but Davidson's timely assistance certainly helped Stovall, who was swimming around in the water hanging on to his Triangle training parachute and waiting for assistance.

Lieut. Dyke F. Meyer and Private Venus, who arrived at the scene, secured a rowboat which was close by, and rowed to the assistance of the swimmers, bringing them and their parachutes safely to shore. It was an exciting experience for both men

AS OUR ENGLISH COUSINS SEE US

AND SO TO WAR
I WANNA GO HOME TO DIXIE

"The Major's compliments and he's in his bath. Will you please go easy round the corners as he don't want the water tilted into the library again!"

The Boeing Super-Bomber, according to the press, is ready for test for the U.S. Army Air Corps. It has sleeping quarters, mess room, cook's galley, electricity generating plant, and, we imagine, canteen, cocktail bar, baths H. & C., Sun-Ray parlour, and all modern conveniences. And someone did mention military equipment.

- From "The Aeroplane" - London, Eng.

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NO FIDDLING IN BUILDING ROME.

Weeds are more or less obnoxious to most people, and these weeds include certain brands of "what the country needs most." There is one weed, however, which is particularly odious to the Commanding Officer of Mitchel Field - that species with yellow petals which frugal folks are fond of gathering for the purpose of concocting quite a potent drink.

Dandelions grow everywhere, and the post of Mitchel Field was no exception to the rule. In consequence, a general clean-up followed, and garden tools were very much in demand. It happened that the dandelions grew in such profusion around the hangar of the 97th Observation Squadron that the Commanding Officer of that outfit deemed it wise to detail two men to proceed with the job of eliminating the pesky weed from that neighborhood.

One of the men on the detail took his task seriously, and the dandelions were being pulled up with commendable regularity. The other man, either through sheer laziness or distaste for the calling of "a son of the soil," was inclined to take things rather easy.

Observing his companion falling down on the job, the Industrious Enlisted Man growled:

"Hey, Pete! You'd better get going; you know what the Kayo said about this job."

"Aw, pipe down! What's the rush? Rome wasn't built in a day!"

"Yeah, that's true," rejoined the I.E.M., "but Colonel Frank wasn't there!"

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Ace (relating war experience): "I had flown three miles over the German lines when I found that my engine was missing."

Girl: "Heavens! How could you fly so far without an engine?"

"They had to fire one of the observers."

"Was it on the ground that he was incompetent?"

"No, it was while he was in the air."

"Stay here with the balloon until the enemy is in sight - then run," said the Captain, as he started off for the rear.

"Where are you going?" shouted a private.

"I'm starting now, men - on account of my rheumatism."

THE PANAMA - GUATEMALA FLIGHT

By the News Letter Correspondent

WHEN the dry season comes to Panama, the Air Corps won't stay put in the Zone; for, in addition to the regular maneuvers, there are planned many trips into new terrain of Central and South America. And there were no exceptions this year, the longest trip to date being to Guatemala City.

Starting in February to gain momentum among the officers of France and Albrook Fields, the idea of the flight finally resolved itself into a take-off on the morning of April 5th. Participating in the flight was Brigadier General George H. Brett, Commanding General of the 19th Composite Wing, flying as a free lance in a B-10 airplane; six additional B-10's under the command of Major Willis R. Taylor; six P-12's and one C-27, under the command of Lieut. Colonel William O. Butler, who was also Group Commander.

The P-12's and the Bellanca left the two Canal Zone fields at 6:00 a.m., and rendezvoused at David, proceeding from there up the Pacific coast. The B-10 flight rendezvoused at Puntarenas, Costa Rica. The France Field contingent, heading out over the Atlantic, turned in across Costa Rica and flew down the richly cultivated, mountain-flanked San Jose Valley. The peculiar geography of this part of the world was brought to our attention by the fact that the shortest course for the Albrook B-10's between the two Pacific Coast points of Albrook and Puntarenas took them well out over the Atlantic Coast.

After stopping at Managua, Nicaragua, for lunch, we proceeded on across Lake Managua with its Fujiyama-like Monotombo, and then over a small active volcano with steam pouring out of its well defined crater. A little farther on we passed over an extinct crater whose circular knife-edge rim, three miles in diameter, dropped several thousand feet to a turquoise lake. The whole region was full of volcanoes, but their smoke and the blue haze from burning tobacco fields limited our visibility so that we missed most of them.

Another half hour through the hazy mountains brought us over and past San Salvador, well shut in by precipitous ranges. We soon cut toward the Pacific Coast and flew for an hour along the beach and uneventful lowlands of Guatemala. To our right we could see the mountains, wreathed in clouds and blue haze, guarding the interior of the Republic.

We soon swung right toward an opening marked by the tortuously winding railroad leading from coastal San Jose up through a pass. The valley quickly rose to meet us, and as we climbed to escape it we were continually flanked by mountains half buried in clouds. At places the valley became so narrow that it looked like Gaillard Cut, and our "cross country echelon" quickly became the more comfortable "follow the leader."

At 6,000 feet we finally poured through the last bottle neck pass into a wide, sunny, mountain-rimmed valley, in the center of which sprawled a white gleaming city, appearing to us like the City of Baghdad.

We found that the cool mountain City of Guatemala lives well up to the illusion of our first aerial glance. The strongest first impression we received was of its military orderliness. Everywhere were military uniforms and government buildings, along the boulevard parks and in the midst of the business section.

But perhaps the most lasting impression is of the striking contrast between the ancient and the modern culture of Guatemala. Down a sleepy Spanish street paved with stone flanges rumbled an ox-drawn cart led by a boy tapping the yoke with a stick; while only a block away a concrete thoroughfare leads past modern, even modernistic, shops, and widens as it passes through an impressive park. Down the side streets scurry native women, barefooted, and dressed in the bright colors that only Guatemala can produce, carrying baskets of vegetables and flowers on their heads; while around the corner thrive the latest fashions and customs of our civilization.

In the park an ancient and immensely rich cathedral faces a modern conch shaped orchestra stand, and in the evening the park is full of people listening to the concert by the hundred-piece symphony orchestra. After a few days you realize that here exists the best of Spanish civilization, flavored by a more ancient culture which it does not succeed in entirely relegating to the countryside.

We did not, however, spend all our time in Guatemala City. Some made a trip to Antigua, once the center of all Spanish domain in the New World, but since reduced by a nearby volcano (except for one well preserved church, dated 1527) to magnificent ruins. And another trip was made to the land of the Chichi Indians, some 30 miles away and 5,000 feet higher in the mountains.

These Indians are famous for their religious fervor. Dressed in black knee breeches and shirts, they keep incessant pilgrimages up the steps of the various churches, moving in a blue haze of smoke from the torches they carry. Part of the service is a flute player continually on duty in a church tower. They are Catholics; but the local priest, Dr. Rossbach, claims it has taken too many years to gain their confidence for him to risk attempting to change the somewhat unorthodox ritual of his parishoners.

Dr. Rossbach, by the way, possesses what is probably the most extensive knowledge of Mayan culture in the world, and in thirty years has assembled an invaluable collection of ancient Mayan jade carvings. Those who made the Chichicastenango ("land of") trip claim it in itself is well worth the whole flight, just for the privilege of talking with Dr. Rossbach.

In Guatemala we were entertained at the American Legation by the Minister, Mr. Desportes; and here we met many other residents of the city, including several members of the Guatemalan Air Force, graduates of Kelly Field. Our visit was also made pleasant by the kind hospitality of Lieut. Colonel and Mrs. John F. Davis. Colonel Davis is Commandant of the Guatemala Military Academy.

Due to the pressure of official business at home, General Brett, accompanied by Lieut. Shedd in another B-10, departed on Wednesday morning for Panama. For the rest of the flight, all good things, including money, soon come to an end; and after we had bought all the native belts, shawls and shoes we could afford, we left for home, carrying pleasant memories of the hospitable mountain city. Bad weather in the bottle neck pass held us up until 3:00 p.m., on April 9th, so that we ducked out just in time to spend the night in San Salvador, where we were entertained at the home of the American Minister, Dr. Corrigan. The next morning we were off to Managua, and so home to bed. Thus ended a 2,000-mile trip through five Central American countries, well satisfying our wanderlust - for several months, at least!

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The Maneuvers at Rocky Mount, N.C.

(Continued from Page 6.)

in thick and fast, causing the teletype to sound like a teletype. From then on we were kept on the jump, bombing enemy camps at Virginia Beach and Edgewood Arsenal, destroying enemy supplies near Mulberry Island, fighting off enemy Pursuit near Smithfield, annihilating Red air and ground troops by the hundreds. Every mission was successful, every bomb found its mark; the enemy's equipment was being destroyed so fast that we expected to hear of an armistice early during the second week. Morale was high, health of all the men and officers excellent.

That didn't last long. One day while I was receiving messages over my radio I heard m.g. fire (machine gun). I jumped to my guns in time to see a Red peashooter streak by. A minute later one got us. Luckily, only one cylinder was blown, and we were able to repair it in enemy territory under cover of darkness. In being forced down, the pilot picked a small field near Langley Field where we hid while making repairs. Although the field was full of irrigation ditches, we made a successful take-off and returned to Rocky Mount.

During our absence, Red Pursuit had attacked our camp. The Squadron suffered heavy losses, including two airplanes, all of our mess equipment, four officers and seven men. We were too busy to do much about anything except work. The Red fleet was approaching and our orders were to sink it.

On the next two missions, the Red fleet was completely wiped out,* and we received word that the war was over. Just when we expected to return here, we started to erect a more permanent camp. That means we won't return until December 12th. How about sending me some dough?

Your soldier son,
John.

P.S. I forgot to tell how we almost lost one ship at sea. We were flying about 150 miles from shore when some stray shrapnel struck the left engine and it started to catch on fire. The pilot shut it off and flew on one engine for twenty minutes to allow it to cool off, then he started it and the thing seemed to be okay. The whole crew had at least one leg over the side while it was acting up. They said they weren't scared.

P.P.S. Don't forget the dough. I know a cute Rocky Mountaineer, and I've gotta date.

Headquarters and Headquarters Squadron: This organization together with the tactical units of the Group just completed two weeks of Field Exercises at Rocky Mount, N.C. Due to the excellent cooperation and friendship of the people of this enterprising city, an excellent time was enjoyed by both officers and enlisted men. Entertainment was lavishly offered by the city, and, within the limitations required by a daily four-hour mission, were accepted by all concerned. The intense interest of the people of this district in the Air Corps and our small "show" located on their airdrome was shown by the immense crowds which came to the field daily. On Sunday, and again on the following Friday, which was "Open House" day at the camp, the highways were swamped. State Police estimated that from seven to ten thousand automobiles came to the airport. On Friday, Major Giles brought down one of the Y1B-17 Bombers, so we were able to put on a comparative display of aircraft, using a Y1B-17, a B-10B and an A-17 Attack plane.

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*All of our fleet was supposed to be doing business on the West Coast.

MAINTENANCE NAVIGATION FLIGHT BY ADVANCED SCHOOL STUDENTS

On Monday, May 17th, in accordance with a plan previously outlined, 74 airplanes from the Air Corps Advanced Flying School, Kelly Field, Texas, took off on the customary maintenance navigation training flight, as ordered by the Secretary of War. The flight was commanded by Major R.D. Knapp, Director of Flying Training at the Air Corps Advanced Flying School. Members of his staff included Captain R.E. Randall, Publicity Officer; Captain John C. Crosthwaite, Adjutant; and Captain Ralph E. Holmes, Commandant of Cadets. The Commanding Officer and his staff flew BT-8 type training airplanes.

The flight sections consisted of the Observation Section, with 26 Observation type airplanes and Captain O.P. Weyland in charge; the Pursuit Section, with 24 Pursuit type airplanes and Major John V. Hart in charge; and the Attack Section, with 11 Attack type airplanes and nine bi-motored airplanes and Captain Glen C. Jamison in charge.

The purpose of the flight is to give the students their final navigation training flight, using all the navigational aids available; to acquaint them with operations and use of the Federal airways; to further their instruction in maintenance of airplanes on field maneuvers; and to create an interest in the various colleges visited as to the educational facilities offered by the Air Corps at the Army flying schools.

On the first day all sections proceeded to the University of Oklahoma at Norman, where they rendezvoused at 3:00 p.m. On Tuesday, all sections effected a rendezvous at Stillwater, Oklahoma, at 11:00 a.m., where the Observation and Bombardment airplanes remained overnight. Stillwater is the site of the Oklahoma A. & M. College. The Attack Section, minus the bi-motored airplanes, proceeded to Lawrence, Kansas, to visit the University of Kansas, arriving there at about 4:00 p.m. The Pursuit Section went to Columbia, Mo., visiting the University of Missouri. They arrived there at about 4:20 p.m.

All sections rendezvoused on Wednesday at the University of Arkansas, Fayetteville, Ark., at 4:00 p.m. The Observation and Bombardment airplanes made the trip via Claremore, Oklahoma, where they stopped at Will Rogers Airport at 10:00 a.m., and visited the Oklahoma Military Academy. They were scheduled to return to Kelly Field on May 20th.

"Numerous clippings of the publicity accorded this flight at the various towns through which it passed have been received by this office," reports the News Letter Correspondent, and he adds: "It is evident that a great deal of interest in the Air Corps Advanced Flying School is being exhibited, particularly by college students."

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BOLLING CONTROL TOWER IS A GOOD WATCH TOWER

On the afternoon of May 11th, Lieut. Colonel Gerald E. Brower, Air Corps, donned his flying equipment, obtained his clearance from Operations, and went out to his airplane, an A-11, prepared to make a navigation flight to Langley Field, Va., and return. Before leaving the line, he called the control tower to check his radio and receive take-off instructions, and then proceeded to the north-south runway. Private H.W. Fraley, the operator on duty at the tower, had formed a habit of watching closely all airplanes taking off or landing, and was rewarded for his watchfulness. As Col. Brower passed the tower on the take-off and just a few feet before the plane left the ground, the operator noticed the left tire lose its shape and begin to flop around. He waited a few minutes and when the pilot called in again he notified him of the flat tire and asked for any instructions. Col. Brower answered that he had noticed a few bumps just before the plane left the ground, but wasn't sure that it was caused by a flat tire, and he came back to the field to land. The tower operator had notified Operations, and the crash truck and ambulance were standing by. Fortunately, the landing was made without mishap and the plane was brought back to the hangar for a tire change.

A few weeks previously, the same operator had a similar experience with a Navy plane, though not so successful. He had watched a formation of three Navy planes with retractable landing gear take off from the Naval Air Station across the way for some practice flying. On returning to the field, the first and second pilots circled, lowered their landing wheels and came in for a landing. The third pilot also circled in a glide, but did not lower his wheels, so the tower operator quickly tried to contact him by radio. He received no answer, and there was no indication that the pilot had heard him, for he was still coming in with his wheels up. The operator then tried to attract the pilot's attention with the traffic control light, but failed again. He then picked up his field glasses for a closer look at the plane and focused his vision on it just in time to see the look of surprise on the faces of both the Navy pilot and his observer. The plane was considerably damaged, but neither of the occupants was injured. Had the pilot glanced at the control tower he may have avoided the accident.

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PHOTOGRAPHS OF THE CONCHAS DAM PROJECT

First Lieut. Charles F. Densford, Air Corps, pilot, and Staff Sergeant Herman L. Chestnutt, Air Corps, photographer, returned April 24th from Conchas Dam, New Mexico, where they photographed the progress of construction on a project of the U.S. Army Engineers.

This is the second of a series of progress photographs made at intervals of approximately four months by this photographic team. The Army airmen in a period of ten days spent 26 hours and 55 minutes in the air, made 47 vertical photographs and 48 oblique photographs, also 200 feet of 16 mm. movie film. It is anticipated that the next flight will be made about September 1st, next.

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MORE GOOD SHOOTING BY LIEUT. DENSFORD

Lieut. Charles F. Densford, Air Corps, stationed at Kelly Field, Texas, resumed activity in pistol shooting, taking third place in the San Antonio Spring Pistol Championship on May 9th, and by winning individual honors in a match at Monterrey, Mexico, conducted by the Asociacion Regiomontario de Caza y Tiro. In the last-named match, Lieut. Densford got within one point of a perfect score- 199 x 200. His nearest competitor, Mr. Ogden of the Border Patrol, scored 194 out of 200.

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FORT SILL A BUSY PLACE DURING MANEUVERS

The transportation of GHQ Air Force troops to the West Coast kept Fort Sill, Oklahoma, on practically a 24-hour schedule during the first part of May. The Provisional Transport Squadron, consisting of eleven C-33's and one C-36, made five overnight stops at Fort Sill from May 1st to 10th. On their three trips through to the West Coast they carried about 350 men and officers, who were accommodated at Fort Sill on the overnight stops. In addition to the Transports, 15 PB-2's made a stop for service on May 2nd, and 28 P-26's made an overnight stop on May 4th.

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MORE Y1B-17 BOMBERS REACH LANGLEY FIELD

Major Vincent J. Meloy, Commanding Officer of the 20th Bombardment Squadron, recently arrived at Langley Field with the first Y1B-17 for that organization. The flight from Seattle, Wash., was made on schedule all the way. At one point it was necessary to go to 17,000 feet to pass over a dust storm. The ferry crew on this airplane, in addition to Major Meloy, were Major Barney M. Giles, Flight Supervisor and co-pilot; 1st Lt. F.E. Glantzberg, Navigator; Master Sgt. H.R. Kashe, Crew Chief; Staff Sergeant L.L. Fiebrich, Assistant Crew Chief; and Private, 1st Class, C.D. Lake, Radio Operator.

The 20th is very proud of its new "Flying Fortress."

The 96th Bombardment Squadron added another Y1B-17 to its list of assigned airplanes when Captain C.E. O'Connor, 1st Lieuts. W.H. Higgins and W.C. Bentley, accompanied by Technical Sergeant G.W. Olson, Staff Sergeant Harry Sichard and Corporal D.J. Smith arrived at Langley Field from Seattle, Wash., on May 9th. The flight was made in two "hops," the first from Seattle to Cheyenne, via Portland, in order to avoid icing conditions, on May 8th, and the second from Cheyenne to Langley Field, the route passing over Lincoln, Neb.; Chanute Field, Ill., and Patterson Field, Ohio. The total distance was approximately 2600 miles, and the total flying time was 15 hours.

On May 5th, Major Barney M. Giles, pilot; 1st Lieut. P.G. Miller, co-pilot; 2nd Lieut. L.S. Wait, co-pilot-engineer; Master Sergeant Haney, flight engineer; and Sergeant Connor, radio operator, took off from March Field, Calif., at 6:25 p.m. (PST) and arrived at Langley Field, Va., at 7:15 a.m. (PST), making a non-stop flight in 12 hours and 50 minutes. The distance flown was 2450 miles.

Immediately after the take-off, an altitude of 14,000 feet was gained and maintained until 9:50 p.m., when it became necessary to descend to 10,700 feet, due to icing conditions. At 11:45 p.m., 14,000 feet was resumed and maintained until arrival at Langley Field.

The B-17 performed very satisfactorily throughout the flight. This plane did not have the bomb bay tanks installed. Had these tanks been installed, the elapsed time would have been reduced something like two hours, inasmuch as maximum cruising speed could have been maintained throughout the flight.

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Biographies

LIEUT. COLONEL CHARLES B. OLDFIELD

Lieut. Colonel Charles B. Oldfield, Air Corps, who was recently assigned as Commanding Officer of Air Corps troops at Fort Lewis, Wash., is a native of Norfolk, Va., where he was born April 3, 1891. After service in the Regular Army as a Private, Company M, 29th Infantry, and as Corporal and Sergeant, 1st Class, Quartermaster Corps, from November 3, 1912, to November 28, 1916, he accepted a commission on the following day as a second lieutenant of Infantry, and was promoted to 1st Lieutenant on the same date; to Captain of Infantry, June 16, 1917, and to Major (temporary) of Infantry, August 15, 1918. He was discharged from this temporary rank on February 11, 1920.

Detailed to the Air Service in October, 1920, Colonel Oldfield received his primary flying training at Carlstrom Field, Arcadia, Fla., which he completed in April, 1921, and his advanced training at the Air Service Observation School at Post Field, Fort Sill, Okla., from April 13 to September 15, 1921, following which he was a student at the School for Aerial Observers at Fort Sill to December 15, 1921. He was rated as Airplane Pilot, October 14, 1921, and as Airplane Observer, April 17, 1922.

After a brief period of duty as an instructor at the Air Service Observation School, Post Field, Colonel Oldfield was detailed to duty as Executive Officer, 95th Division, Organized Reserves, Air Service, with station at Oklahoma City, Okla., to April 2, 1922, and at Muskogee, Okla., to February 20, 1925.

For over five years, and up to August, 1930, Colonel Oldfield was stationed at the Air Corps Primary Flying School at Brooks Field, San Antonio, Texas, where he served as Executive Officer of the post and as Assistant Commandant of the School. At various times he served as Commanding Officer and Commandant at Brooks Field during the temporary absence of the regular incumbent of these positions.

Following duty as a student at the Air Corps Tactical School at Langley Field, Va., from August, 1930, to July, 1931, he was, upon graduation, assigned as a student to pursue a two-year course of instruction at the Command and General Staff School at Fort Leavenworth, Kans.

On June 13, 1933, Colonel Oldfield assumed command of the 12th Observation Squadron at Brooks Field, Texas, and he served at that post until March 6, 1935.

Early in 1934, during the operation of the Air Mail Service by the Army Air Corps, he served on the staff of Brigadier General Henry H. Arnold, then commander of the Western Zone. In February, 1935, he graduated from the Advanced Air Navigation School which was conducted at Rockwell Field, Calif.

Colonel Oldfield's next duty assignment was with the GHQ Air Force at Langley Field, Va., where, by virtue of his position as Commanding Officer of the 2nd Bombardment Group, he was, on April 2, 1935, advanced to the temporary rank of Lieut. Colonel. He received his permanent promotion to the rank of Major on December 20, 1927.

During the latter part of March, 1936, he led a ferry flight of nine Martin B-10B Bombardment airplanes from Langley Field, Va., to France Field, Panama Canal Zone, via Brownsville, Texas; Mexico, and several Central American countries.

Colonel Oldfield's total flying time is approximately 5800 hours.

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LIEUT. COLONEL HOWARD J. HOUGHLAND

Lieut. Colonel Howard J. Houghland, Air Corps, now on duty as an instructor at the Cavalry School at Fort Riley, Kansas, was born at Scottsburg, Indiana, July 9, 1891. Enlisting in the Army in September, 1909, he served as Private, Corporal and Sergeant, Company H, 27th Infantry; and as Sergeant, 1st Class, and Quartermaster Sergeant, Quartermaster Corps, to December 3, 1916. He accepted a commission as 2nd Lieutenant of Infantry on December 4, 1916, and from January 2, 1917, to April 13, 1917, he was a student at the Army Service School at Fort Leavenworth, Kans.

After serving with the 26th Infantry at Harlingen, Texas, to June, 1917, he was ordered to duty overseas, and served in various capacities at a number of stations, and participated in the Montdidier-Noyon, Aisne-Marne and St. Mihiel operations. He served in France until October 20, 1919; and in Germany as Personnel Adjutant, Provisional Infantry Brigade, to May 28, 1920, and as Commandant, General and Commercial School, Educational and Vocational Training, Coblenz, to January 5, 1921.

Returning to the United States in January, 1921, Colonel Houghland was detailed to the Air Service and assigned as a student at Carlstrom Field, Arcadia, Fla., for flying training. He completed the primary flying course in September, 1921, and was transferred to the Advanced Flying School, Kelly Field, Texas, where he completed advanced training in Bombardment Aviation on December 23, 1921. He received the ratings of Airplane Pilot and

Airplane Observer.

Colonel Houghland remained at Kelly Field as Adjutant of the 2nd Bombardment Group and Commanding Officer of the Headquarters Detachment of that Group until June 26, 1922, when he was transferred with this organization to Langley Field, Va., where he performed these same duties until August 29, 1922. He commanded the 3rd Air Park at Langley Field to October 11, 1922, and was then assigned to duty as a student at the Air Service Tactical School, graduating June 15, 1923.

After service as an instructor and as Operations Officer of an ROTC summer training camp at Maxwell Field, Ala., to September, 1923, he was transferred to Kelly Field and assigned to the 3rd Attack Group, performing among various other duties those of Group Operations Officer, Group Personnel Officer and Group Intelligence Officer.

On June 27, 1924, Colonel Houghland was placed in command of a detachment of the 12th Observation Squadron and transferred to Fort Sam Houston, Texas. In August, 1925, he was assigned as a student at the Command and General Staff School at Fort Leavenworth, Kansas, and following his graduation therefrom in June, 1926, he was transferred to New York City for duty with the Organized Reserves of the 2nd Corps Area.

Assigned in June, 1928, as Air Officer of the 7th Corps Area, Fort Omaha, Neb., Colonel Houghland served in this capacity until June, 1934, and performed additional duty as Unit Instructor of the 314th Observation Squadron from September, 1931.

From June 15, 1934, to March 11, 1935, he was on duty as Executive Officer at Langley Field, Va., and to May 31, 1935, he served as commanding officer of the 58th Service Squadron. He was then assigned to his present duty as Instructor at the Cavalry School at Fort Riley.

Colonel Houghland was promoted to 1st Lieutenant, November 26, 1916; to Captain, June 15, 1917; to Major, December 15, 1927, and to Lieut. Colonel (temporary) June 16, 1936.

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The following-named Air Corps officers are under orders to proceed to Maxwell Field, Ala., for duty, reporting about July 1, 1937:

Major Fred C. Nelson (Captain) from Selfridge Field, Mich.

Captain George A. Whatley from the San Antonio Air Depot, Duncan Field, Texas.

1st Lieut. Robert Lewis Easton from Randolph Field, Texas.

1st Lieut. Hoyt L. Prindle from Maxwell Field, Ala.

AVIATION DAY

General Malin Craig, Chief of Staff of the United States Army, issued the following statement on May 28th, which was proclaimed by the President as National Aviation Day:

"The first observance of National Aviation Day serves to remind us of the great progress that has been made in both civilian and military aviation in the United States in the past few years.

Travel by aircraft has become commonplace. The time consumed in crossing the United States has been reduced from days to hours, and that in crossing the Pacific from weeks to days. Skill in navigation and improvements in aviation engineering have made flying a safe and comfortable means of travel.

Progress in military aviation has been equally pronounced. The combat aircraft now being delivered to our army are unsurpassed elsewhere, and are double or treble the power of the types purchased a few years ago.

The United States Army now has on hand and under order approximately 1,650 modern airplanes, of which by far the greater number are combat planes. In addition we have a number of planes technically classed as obsolete but still suitable for service. In the Army appropriation bill now pending before the Congress, provision is made for about 550 additional planes, so that deducting estimated losses due to obsolescence, deterioration and accidents, we should have in another year in the neighborhood of 2,000 army airplanes of recent types. Adding the number of modern planes possessed by the Navy and the Marine Corps, our total strength in military planes will soon be well over 3,000."

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PHOTOGRAPHING OF SOLAR ECLIPSE

As a member of the Hayden Planetarium-Grace Expedition, Major Albert W. Stevens, Air Corps, sailed on May 21st on the S.S. SANTA CLARA for Peru, expecting to arrive on June 3rd, for the purpose of obtaining aerial photographs of the solar eclipse on June 8th. Included in the Air Corps photographic equipment taken on the journey were one Air Corps Type A-2 (Akeley Sound) camera, one Air Corps K-3 B single-lens camera, and one Air Corps K-6 single-lens camera.

It is proposed to take photographs from an airplane at an altitude of 28,500 feet approximately over the peak Huascaren.

There is a possibility, of course, that clouds may prevent a view of the corona from the ground, and in that event pictures from an airplane may show the shape of the corona, even though the image of

(Continued on Page 17).

CHANUTE FIELD PERSONNEL INSPECT Y1B-17

A Y1B-17 airplane arrived at Chanute Field, Rantoul, Ill., on May 10th. It was piloted by 1st Lieut. R.L. Travis, with 2nd Lieut. C.J. Cochrane as co-pilot and 2nd Lieut. J.L. Templeton as bombardier.

During the four days that the airplane remained at Chanute Field, enlisted students of the Department of Mechanics of the Air Corps Technical School performed an inspection on this airplane. Student officers of the Maintenance-Engineering Course were given the opportunity thoroughly to examine the airplane, fly in it, and study the new features thereof.

Student officers from the Armament Department were also afforded an opportunity to inspect the new armament installations and to ride in the airplane and observe the new features which this airplane embodies.

Other school and post personnel took advantage of the opportunity to examine the plane and observe the latest type of engineering, armament, radio and navigation installations in a Bombardment airplane.

The Acting Commandant, Major E.G. Harper, and the school and post personnel expressed their appreciation for the splendid cooperation of the GHQ Air Force in providing the school with this latest type of aircraft for instructional purposes.

The arrival of this airplane at Chanute Field was but another step in accordance with the policy inaugurated by Lieut.-Colonel Junius W. Jones, Commandant of the Air Corps Technical School, when he first assumed command. In brief, this policy is based upon the well-known fact that technical specialists to be of most value to the service must be trained and thoroughly familiarized with the maintenance, repair and inspection of the latest aircraft and auxiliary equipment.

At present the following airplanes are being used for instruction of student personnel: two PB-2's, one A-17A, one B-10, one XB-14, one C-33, one O-46 and one BT-9.

Lieut. Colonel Junius W. Jones is now at the Douglas Aircraft Factory preparing to ferry a new B-18 airplane to Chanute Field for use in instructing students.

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Colonel Albert L. Sneed, Air Corps, who has held temporary rank as such since June 22, 1936, was promoted to the permanent rank of Colonel, May 1, 1937.

Major Austin W. Martenstein, Air Corps, Instructor at the Air Corps Tactical School, is under orders for duty as a student at the Army War College in August.

COMMENDATION FOR MARCH FIELD ENLISTED MEN

Private, 1st Class, Robert C. Jones and Private Fred S. Pretzer, of the 4th Air Base Squadron, March Field, Calif., went driving to Riverside on April 11th, last, and when they passed along Victoria Ave. about 5:45 p.m., they saw a burning wreck with flames licking greedily about a human figure lying next to it. They immediately decided they might be of assistance.

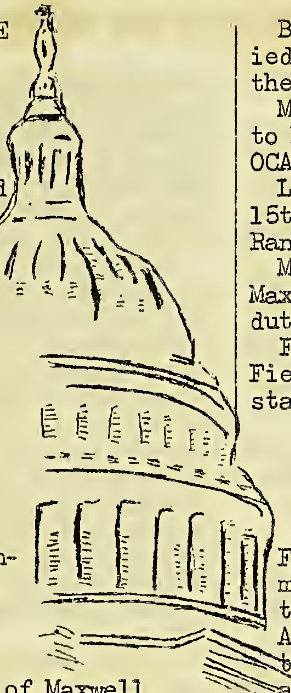
It appears that Sergeant Dan Davis, of the Riverside Police Department, who was driving a car, had crashed into a palm tree and was knocked unconscious through the impact. A Miss Margaret Paden, who happened to be in the vicinity, had succeeded in dragging the unconscious policeman from the car. The two soldiers helped to carry him across the street to safety just as the gasoline tank of the burning car exploded. They thought very little of their assistance at the time, but the officials of Riverside felt that their timely help and thoughtfulness was worthy of commendation, as attested by the following letters:

> "Please accept the thanks of the Governing Body of Riverside, and the admiration of its people, for your prompt and effective work in assisting Miss Margaret Paden with rescuing Police Sergeant Dan Davis, after she had dragged him from his burning automobile last Sunday afternoon.
>
> Your prompt first aid no doubt has materially contributed to Sergeant Davis' fair condition and hope for recovery in the hospital.
>
> Not only the thanks of Sergeant Davis, but also those of his brother officers go to you for your prompt and willing action.
>
> Sincerely,
> W.C. Evans, Mayor."

> "Please accept our sincere thanks for the aid rendered to our brother officer Sgt. Dan Davis when he critically injured himself in an accident on Victoria Avenue, Sunday, April 11th.
>
> Your timely arrival, your valuable assistance in removing him to safety and the first aid you gave him resulted in saving his life, for otherwise he would have burned to death.
>
> Words are a poor medium at a time such as this, but the members of the Riverside Police Department through me, wish to express their sincere appreciation for a noble deed, promptly and efficiently performed. Members of the Riverside Police Department, by
> Nestor N. Brulé, Chief-of-Police."

We, members of the Army Air Corps, congratulate these two sincere young soldiers and hope that their action will set a shining example to all of us.

NOTES FROM THE WASHINGTON OFFICE



Major General Oscar Westover and Captain Luther S. Smith returned from the West Coast maneuvers on May 20th; Colonel H.H.C. Richards on May 21st, and Lieut. Colonel Gerald E. Brower on May 25th.

Lieut. Colonel William E. Lynd left May 27th on a navigation flight to the West Coast.

Colonel Wm. C. McChord returned May 27th from a navigation flight to March Field for the purpose of observing the GHQ Air Force Maneuvers. Later he visited Tacoma and Seattle in order to observe air activities in the Northwest.

Colonel Rush B. Lincoln returned May 28th from Lakehurst, N.J., where he served on a board to investigate the cause of the Hindenburg airship disaster.

Captains Harrison G. Crocker, of Maxwell Field, and Ray H. Clark, of Chanute Field, returned to their respective stations on May 15th, following temporary duty in the Chief's Office.

Major Hugh A. Bivins and Captain Clarence S. Irvine returned to Wright Field on May 16th, after temporary duty in the OCAC.

Captain Evers Abbey returned May 16th from a navigation flight to Wright Field and Kansas City, Mo.

Lieut. Colonel Howard C. Davidson returned May 20th from a meeting of an evaluation board at Wright Field.

Recent visitors to the Chief's Office were Colonel Henry B. Clagett, from Selfridge Field; Colonel Jacob H. Rudolph from Maxwell Field; Major Ray A. Dunn, from Maxwell Field; Major Theodore J. Koenig from Mitchel Field; Lieut. Colonel William B. Wright, from Fort Hayes, Ohio; 1st Lieut. Frederick R. Dent, Jr., and C.S. Draper, students at the M.I.T., Boston, Mass.

Major Clarence P. Kane, until recently on duty at the Hawaiian Air Depot, reported May 22nd for temporary duty in the Supply Division before entering upon his duty as a student in the next course at the Army Industrial College.

Major Alvan C. Kincaid left May 22nd for Charleston, S.C.

Colonel Chalmers G. Hall returned May 27th from a conference at Wright Field.

Major Morton H. McKinnon left May 27th on a navigation flight to Dallas, Texas.

First Lieut. John A. Austin returned to Wright Field, May 27th, after temporary duty in the Chief's Office.

Captain Stewart W. Towle returned May 26th from Wright Field.

Major William B. Souza returned May 22nd from a navigation flight to Mitchel Field, and Capt. James B. Jordan returned the previous day from Langley Field.

Major Edward V. Harbeck, Jr., returned from leave of absence on May 18th.

Captain James W. Spry left May 22nd on a technical inspection trip.

Brigadier General Henry C. Pratt, accompanied by 1st Lieut. Dwight B. Schannep, were in the OCAC on May 12th for conference.

Major James T. Hutchison returned May 12th to Langley Field after temporary duty in the OCAC.

Lieut. Colonel Robert L. Walsh left May 15th for the Air Corps Training Center, Randolph Field.

Major Austin W. Martenstein returned to Maxwell Field May 25th, following temporary duty in the OCAC.

First Lieut. John R. Sutherland, of Langley Field, was a visitor while enroute to his new station in the Hawaiian Department.

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18TH RECON. SQUADRON IN MANEUVERS

The 18th Reconnaissance Squadron, Mitchel Field, N.Y., was attached to the 9th Bombardment Group during the Second Wing Concentration, which was based at Phillips Field, Aberdeen, Md., where it served as "eyes" for the Group. Upon receipt of information of approaching enemy men-of-war, the 18th flew to the last reported position and kept the enemy in surveillance until the Group arrived. Splendid weather prevailed throughout most of the period, and much was accomplished.

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LONG FORMATION FLIGHT BY 99TH BOMB. SQUADRON

At sundown one evening in March, the renowned Flight "A" of the 99th Bombardment Squadron, Mitchel Field, N.Y., commanded by 1st Lieut. "Joe" Baylor, took off on their routine training flight with their destination Mitchel Field, non-stop, via Pittsburgh, Columbus, War (W.Va.) Bluefield, Clifton Forge, Washington and Philadelphia. Departing from Mitchel Field at 6:30 p.m., the flight again reached Mitchel Field at 3:30 a.m., the following morning after nine hours of night formation covering approximately 1200 miles.

Upon landing, the ships still contained enough fuel to carry them an additional 350 miles. The radio operators maintained contact with Mitchel Field throughout the flight and sent position reports to the Group radio station at 30-minute intervals. None of the members of any crew was relieved from his duties during the entire nine hours. The navigation was faultless, and Lieut. Baylor estimated his time of arrival over each check-point with the minute.

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Photographing of Solar Eclipse

(Continued from Page 15).

the moon's disk be only .20 inch in diamater, using the longest focal length lens that we can utilize in an airplane.

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Major Wendell B. McCoy, at present on duty as Instructor, Air Corps, Tennessee National Guard, is under orders to proceed about September 1st, next, for duty at Brooks Field, Texas.

REMAINS OF NORMAN PRINCE GO TO LAST RESTING PLACE

A local newspaper carried a brief announcement to the effect that the body of Norman Prince, World War aviator, will be placed in the Washington Cathedral on Tuesday, June 1, 1937; that the remains of one of the founders of the famous Lafayette Escadrille were transported to this country from France on a French liner.

Norman Prince, a native of Pride's Crossing, Mass., just north of Salem, was born on August 31, 1887. He was a graduate of Harvard University and took up the legal profession. His aviation career is described in the Book 'The Lafayette Flying Corps," as follows:

'Before the War, Norman Prince had spent many pleasant hunting-seasons at Pau, where he had made friends among the French and learned to speak the language fluently. When the war broke out in 1914 it was natural that his thoughts should turn to France, the country he had grown to love and admire almost as his own. He might have gone overseas as an ambulance driver or to enlist in the infantry, but - like many other horsemen and polo-players - he had become interested in flying, and it occurred to him that if he became a pilot before offering his services to France, he might be received as a member of the Flying Corps - a possibility which appealed to all his instincts as a sportsmen. November found him, in company with Frazier Curtis, at the Burgess school at Marblehead, Massachusetts, learning to pilot hydroaeroplanes, and it was here that he conceived the idea of organizing a squadron of American volunteer airmen to serve with the French. Curtis, also a sportsman and a sincere believer in the Allied cause, gave the project his encouragement from the first, although he confessed that before agreeing to offer his services to France, where he felt that ignorance of the language might prove a serious handicap, he planned to attempt enlistment in the British Royal Naval Air Service.

On January 20, 1915, Prince sailed for France on the *Rochambeau*, and on March 4 he signed his enlistment papers and was sent to be trained at Pau. During the five weeks that elapsed between his arrival in Paris and his enlistment, he worked day and night to interest the French in his project. He obtained the active cooperation of the de Lesseps brothers; he arranged for introductions and interviews through the kind offices of Mr. Robert Chanler; he laid his plans before Mr. Robert Bliss, who introduced Prince to M. de Sillac. His enthusiasm and energy were irresistible; before his departure for Pau he had fairly launched the movement which resulted in the formation of the *Escadrille Americaine*.

Prince was not a man to linger in the schools. On May 1 he was breveted and was soon at the Front, piloting a Voisin with the Escadrille V.B. 108, where his exploits and adventures are too well known to need description. In the autumn he was transferred to the Squadron V.B. 113 equipped with Voisin-Cannon planes - an innovation of which great things were expected. But the life of comparative inactivity irritated Prince, who had the restless and aggressive temperament of a genuine *pilote de chasse*. On October 30, 1915, he wrote *M. de Sillac*: "The squadron with which I am at present is *en repos*. I dislike to stay in such a situation and would prefer to be a member of a unit more active than the *Escadrille of Avions-Canons*, which works rarely except during attacks."

In December, 1915, Prince was given leave, with Cowdin and Thaw, to spend three weeks in the United States - a visit which aroused a vast amount of public interest. All three were sons of families well known at home, and there was a wide appeal in the thought of these young men in French uniform, all of whom had seen action on the Western Front and who were members of a branch of the service which still attracted a certain romantic interest. The newspapers gave entire columns to the subject, and when Germany protested that the visiting pilots should be interned, the question was discussed from one end of the country to the other.

On his return to France, Prince was sent to the R.G.A., at Le Bourget, for *perfectionment* on Nieuport, and on April 20, 1916, he reached the Front again - this time as a fighting pilot of the newly formed *Escadrille Americaine*, the realization of his old dream. His career with the Squadron - as brilliant as it was brief - has been described so fully in a score of magazine articles and books that nothing remains to be said. Like Rockwell and Chapman, he was a pilot of the first order, a real combatant, who would have gone far had he been spared. The *Croix de Guerre*, the *Medaille Militaire*, and *Legion d'Honneur* (awarded him as he lay dying of his wounds) are evidence of the esteem in which his French chiefs held him. He made his last *sortie* on October 12, 1916, the day of the great *raid* on the Mauser Works at Obendorf. Lufbery, de Laage, Masson, and Prince had accompanied the bombers as far as their fuel capacity permitted, and returned to a friendly aerodrome to fill their tanks, taking the air once more to protect the returning raiders. Darkness was drawing on; the bombers were straggling home, harried by determined and aggressive Fokkers. Prince shot down one of the enemy, and when the last of the Allied machines had crossed the lines and it was nearly dark, he made for the field at Corcieux, in the Vosges. Let his friend McConnell tell the rest of the story:

'He spiraled down through the night air and skimmed rapidly over the trees bordering the field. In the dark he did not see a high-tension electric cable that was stretched just above the tree-tops. The landing gear of his aeroplane struck it. The machine snapped forward on its nose. It turned over and over. The belt holding Prince broke and he was thrown far from the wrecked plane. Both of his legs were broken and he naturally suffered internal injuries. In spite of the terrific shock and his intense pain Prince did not lose consciousness. He even kept his presence of mind and gave orders to the men who had run to pick him up. Hearing the hum of a motor and realizing that a machine was in the air, Prince told them to light gasoline fires on the field. "You don't want another fellow to come down and break himself up the way I've done," he said. Lufbery went with him to the hospital in Gerardmer. As the ambulance rolled along Prince sang to keep up his spirits. He spoke of getting well soon and returning to service. It was like Norman. He was always energetic about his flying... No one thought that Prince was mortally injured, but the next day he went into a coma. Captain Happe....accompanied by our officers, hastened to Gerardmer. Lying unconscious on his bed, Prince was named a second lieutenant and decorated with the Legion of Honor....He died on the 15th of October...was brought back to Luxeuil and given a funeral similar to Rockwell's. It was hard to realize that poor old Norman was gone.... He never let his own spirits drop and was always on hand with encouragement for others. I do not think Prince minded going. He wanted to do his part before being killed and he had more than done it. Day after day he had freed the lines of Germans, making it impossible for them to do their work, and three of them he had shot to earth.'"

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ASSIGNMENT OF GRADUATES OF A.C.TECHNICAL SCHOOL

The following-named Air Corps officers, upon the completion of their present course of instruction at the Air Corps Technical School, Chanute Field, Rantoul, Ill., are assigned to stations, as follows:

To Air Corps Training Center, Randolph Field:
1st Lieuts. Berkeley E. Nelson, Walter E. Todd, Morley F. Slaght.

To Langley Field, Va.:
1st Lieuts. Carl W. Carlmark, Lester L. Kunish, Nicholas E. Powel, James S. Sutton, Howard Moore, 2nd Lieut. William H. Wise.

To Mitchel Field, N.Y.:
1st Lieut. Richard T. King, Jr., 2nd Lieut. Francis L. Rivard.

To Fort Leavenworth, Kansas:
1st Lieut. John J. Hutchison, 2nd Lieut. Ray W. Clifton, for duty with Air Corps Detachment.

To Fort Riley, Kansas:
1st Lieut. Clarence T. Mower for duty with the Air Corps.

To Scott Field, Ill.:
2nd Lieut. Chester W. Cecil, Jr.

To March Field, Calif.:
1st Lieuts. Richard A. Grussendorf, Archibald J. Hanna, Henry K. Mooney.

To Fort Lewis, Wash.:
1st Lieut. David H. Kennedy, for duty with the Air Corps.

To Hamilton Field, Calif.:
1st Lieut. Hansford W. Pennington.

To Chanute Field, Ill.:
Captain Narcisse L. Cote, 1st Lieuts. Norman H. Ives, William P. Sloan.

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NEW INSTRUCTORS FOR NATIONAL GUARD AIR CORPS

Four Air Corps officers, now on duty as students at the Air Corps Tactical School, Maxwell Field, Ala., are under orders, effective upon the completion of their present course of instruction, to proceed to duty as instructors with National Guard aviation units, as follows:

Major George P. Tourtellot (Captain) to Detroit, Mich., 33rd Division Aviation, Mich. National Guard.

Major Bernard T. Castor (Captain) to Chicago, Ill., with 33rd Division Aviation, Illinois National Guard.

Captain Clinton W. Davies to Newark, N.J., with 44th Division Aviation, New Jersey National Guard.

Captain John H. Dulligan (from Command and General Staff School, Fort Leavenworth, Kans.) to Indianapolis, Ind., with 38th Division Aviation, Indiana National Guard.

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WING REVIEW FOR MAJOR GENERAL STONE

A number of planes from Albrook and France Fields flew a review on April 20th in honor of Major General David L. Stone, new commander of the Panama Canal Department.

The 19th Composite Wing, led by General George H. Brett, passed the reviewing stand at 9:40 a.m., following General Brett and his two wing men came B-6, O-19, P-12 and B-10 type planes. Three pass-bys were made, and even though the air was rough, as it always is in Panama, the formations flown were excellent. The difficulty of properly spacing ships of four different speeds was ironed out by several practice reviews, and the spacing was coordinated perfectly during the review.

General Stone, having only recently arrived in Panama, was greatly impressed upon witnessing his first Wing Review in the Panama Canal Department. After all ships had landed, he called all the officers and men participating in the Review and gave a short talk in which he commended them on the highly efficient manner in which the Review was handled, commenting on the absence of excessive commands, the fine team work of the entire personnel of the Wing and the fine morale displayed.

Late in the afternoon a reception was held in honor of General Stone. The 74th Squadron hangar was decorated for the occasion, draped with flags of all nations, potted palms surrounding the dance floor, and a B-10 flanked by two P-12's on display, thus giving it a festive appearance, indeed. All officers from France and Albrook Fields were present and endeavored to entertain the many guests, in which they succeeded nobly. A light shower just before the reception made it delightfully cool for dancing, which everyone enjoyed to the strains of very excellent music.

The reception completed an enjoyable day at Albrook Field, and all Air Corps personnel in Panama hope to have the pleasure of repeating the occasion with similar pleasant results.

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Having completed his tour of duty at Indianapolis, Ind., as Instructor, Air Corps, Indiana National Guard, Major Guy H. Gale (Captain), Air Corps, under special orders of the War Department recently issued, is to proceed to Fort Lewis, Washington, for duty with the Air Corps.

GARDENING POPULAR AT LANGLEY FIELD

By Mrs. Walter Bender

A Garden Club was organized at Langley Field, Va., on March 30, 1937, at a meeting held in the Officers' Club. Following the appointment of a committee consisting of Mesdames Andrews, Brant, Weaver, Maxwell, Bender, Glen, McLennan and Hale, officers of the Club were elected, as follows: Mrs. Walter Lloyd Bender, Chairman; Mrs. Maxwell, Secretary; Mrs. Hale, Program Chairman; Mrs. Glenn, Corresponding Secretary, and Mrs. McLennan, Treasurer.

The Crepe Myrtle was decided upon as the post flower, and it was agreed to use them as the principal decorative shrub for the post boulevards.

The Motto:

"We pass this way but once
Let us beautify the path as we go
So that the world may see which way we
went."

Following the publication of a bulletin in April, containing garden hints and club news, immediate results were noted. Colonel Calvert filled all requests for black top soil. Gardens of all descriptions took form.

The post gardener reported that many calls were made for plants, and the supply of rocks and broken cement (which heretofore were unsightly piles) were used to make rock gardens and retaining walls to hold the soil in place.

Colonel Calvert, Q.M.C., was able to obtain 200 very fine large Crepe Myrtle bushes. These are unusually beautiful ones, and they are all putting forth a vigorous growth. They have served to eliminate some of the barren spots at the post and to add much interest to Dodd Boulevard, where they are planted from Headquarters to the circle entering the post.

It is planned to complete the circle and continue the bushes to the gate, and then to complete another boulevard next Spring if funds are available.

During the first week in May, a Flower School was conducted by Mrs. H.C. Weller, of Norfolk, President of the Federation of Norfolk Garden Clubs. The school was held each morning, from 10 until 12 o'clock, and much interest was shown. This school was attended by about fifty women. Mrs. Weller was an interesting instructor.

The first day's lesson was in flower arrangement, and ribbons were awarded for the most attractive and artistically arranged pieces. On the second day, many arrangements were brought in by the ladies, and a small flower show was held. The lesson was in arrangements, and judging ribbons were awarded, as follows:

Table Arrangement: Mrs. Andrews.
Small pitchers: Mrs. Gibbs, Mrs. Carey.
Pair of Vases: Mrs. Calvert.
Miniatures, 3 inches: Mrs. Prindle, Mrs. Maxwell.
Miniatures, 5 inches: Mrs. Gilkeson, Mrs. McCormick.
Bubble Bowl: Mrs. Weaver.
Large Arrangement: Mrs. Stoner, Mrs. Odom
Medium Arrangement: Mrs. Hale, Mrs. Glenn.
Wild Flowers in the Jap manner: Mrs. McLennan, Mrs. McCormick.

On Wednesday the lesson was on the care and preservation of cut flowers, which was very interesting and helpful. There were a good many exhibits, and these were judged by the ladies of the class. The awards were as follows:

Flowers in the Jap manner: Mrs. McLennan, Mrs. Lewis.
Pair Class: Mrs. Maxwell, Mrs. Bender.
Wild Flowers: Mrs. Bender, Mrs. Hutchison.
Table Arrangement: Mrs. Gibbs, Mrs. Hale, Mrs. Hutchison.
Miniatures: Mrs. Bender, Mrs. McCormick.
Bottles: Mrs. Andrews.
Vases: Mrs. Andrews, Mrs. Kilpatrick.

On Thursday morning, twelve of the students were given written examinations. Diplomas were scheduled to be awarded the graduates at the meeting on Friday, May 28th.

The school was concluded with a trip to Fort Boykin, where the group was the guest of Col. and Mrs. Walter Reed Weaver. Fort Boykin is a garden of great beauty. The trees and shrubs are of such blooming varieties that each season a different color scheme is observed. In early spring the reds and pinks, then the yellows, the whites, the lavenders, etc. It was a great pleasure to be included in this party.

The flower school was a financial success. Each student paid 50c, and enough attended to cover all expenses. The course was most valuable and much enjoyed by all who attended.

The Garden Club was invited by the Hampton Roads Garden Club to take part in the flower show held by them May 12th and 13th. This invitation was accepted, and arrangements were made by Mrs. Giles, Mrs. Carey, Mrs. Hale and Mrs. Glenn.

Mrs. Giles captured a second prize with her beautiful blue jug filled with California poppies.

The gardens along the water front are very attractive. General and Mrs. Andrews, and Colonel and Mrs. Weaver have greatly improved their's.

Many interesting and attractive gardens are to be noted. Major and Mrs. Otto Trunk have a very lovely lily pool. Major Trunk also has a very attractive vegetable garden. Green lattice supports demonstrate that a vegetable garden can be a thing of real beauty.

Major and Mrs. C.V. Haynes have made a beautiful border about two feet wide the full length of their yard. They have edged it with box wood and filled it with old fashioned flowers. White garden chairs complete the effect.

Over Colonel and Mrs. Jay Calvert's doorway grows a red, red rose. It has taken much coaxing and love to make a climbing rose do just that, but it is a thing of beauty and is just what these porches need to make them attractive. His other flowers are well arranged.

Major and Mrs. Glen C. Salisbury have a new moon in their yard, but it is of rock and under a weeping willow tree. The borders about the quarters of Majors Trunk and Salisbury have been widened and are colorful with bright flowers and roses.

Major and Mrs. Vincent Meloy have a long row of healthy looking Zinnias that will be a joy this fall. Major and Mrs. Frank Brooke have a beautiful pink rose climbing up the side of their sun porch windows. Their flowers are very lovely. They also have the best indoor garden.

A white rose that climbs over the doorway of Lieut. and Mrs. Lee has been remarked upon by many passers-by. Lieut. and Mrs. Stuart McLennan have an old fashioned flower garden. It is really an unusual one. Captain and Mrs. Kenneth Gould have a wide border and a new rock garden. We see them working there and enjoying it so much that we are anxious to see just what will happen.

Mrs. Wittkop has a beautiful and well planned garden. She spends a lot of time in it. Major and Mrs. Hickey have a pretty garden this year. They have vegetables also. Captain Twitchell has radishes ready for his table and his beans are in bloom. Lieut. and Mrs. Dudley Hale have landscaped their entire lawn, setting out attractive shrubs, bulbs and many perennials. These are beautifully arranged and add greatly to the appearance of this corner.

Major and Mrs. Melvin Asp and Captain and Mrs. Ned Schramm have combined their project to make a symmetrical and pleasing effect. This is an ideal arrangement for double quarters.

Lieut. Colonel and Mrs. Walter Bender expect to have onions with a carnation flavor. She grows vegetables between each row of flowers. And here is the answer to the question of how long does it take to have a beautiful garden - come and see. It was all started and planted this spring when we started the garden club.

All of the gardens have been visited, and many of the items are not new improvements. Lack of space prohibits a more detailed personal list, but many others of especial beauty and interest have been noted, adding much beauty and charm to the post.

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KELLY SHIP WINS MODEL PLANE TEST

On Sunday, May 9th, the San Antonio unit of the International Gas Models Association of America held a practice meet at Kelly Field in preparation for a State Meet at this position June 6th. Six model airplanes were entered. The official winner of the contest was the "Kelly Flyer," handled by Private William Hewgley, 12th Air Base Squadron. A number of officers at Kelly Field contributed to the expense of procuring this model.

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NEW POLO FIELD AT RANDOLPH

The new polo field at Randolph Field, Texas, was officially opened on May 19th with a game between the San Antonio Polo Club and the Air Corps Polo team. The San Antonio Club won by a score of 6 to 1. The Air Corps team is composed of Lieut. Colonel Thomas W. Hastey, 1st Lieuts. A. W. Kissner, J. K. Brown and Cecil Combs.

PICKINGS FROM MATERIEL DIVISION, WRIGHT FIELD

Your Power Plant Correspondent, without lengthy discussion, and with all due respect to Mr. Winchell and his column, not to mention spring fever, will ask you: Did you know that -

The R-2600 (Wright) has just passed a very commendable type test at 1500 horsepower takeoff rating.

About four out of five Unsatisfactory Reports received recommend that the broken part be made of heavier and stronger material.

Ice may form in the throat of your carburetor on a very warm day if the humidity is high.

Lieut. G.F. Smith, the new boss of our Engine Installation Unit, is the father of a bouncing baby girl - a blonde.

Lieut. J.W. Sessums, the new understudy of "Bill" Irvine, is the father of a bouncing baby girl - a brunette.

An honest effort is being made to soundproof the torque stand.

689 Inspection and Evaluation Boards have kept us head over heels in work during the past few months.

The V-1710 (Allison) has passed the type test and has some 100 hours' flying time in the A-11A.

Our new electric blower fans are almost installed, and the engineers can hardly wait until they hear the roar of the big windjammers.

Captain F.D. Klein, after an extended tour of duty as Officer in Charge of the Fuels and Lubricants Laboratory, is about to foresake his octane numbers for a pineapple uke.

When you leave the ground on a hot summer day of 100 in the shade your gasoline is boiling by the time you have reached 15,000 feet.

It would be a big help in solving problems presented in Unsatisfactory Reports if more clues to the failure were presented. In other words, did it happen at wide open throttle, nose down; after hours of running with a lean mixture; on a youngster's first trip to his home town; did a truck back into it, or did a recruit drop it on the Hangar floor?

The R-680-7 (Lycoming) recently passed the type test.

So far it looks like spark plugs and flexible drive shafts are a horse on the house, but we have hopes; be patient.

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RESERVE LIEUTENANT WRITES A BOOK

Second Lieut. Bierne Lay, Jr., Air Reserve, now on extended active duty at Langley Field, Va., has written a book, entitled "I Wanted Wings," which has been acclaimed by critics as one of the most fascinating books ever written about flying. "This is not a book for fliers" says Lieut. Lay in his preface. Nevertheless, plenty of fliers will sit on the edge of their chair and hold their breath while reading parts of it. In fact, despite Lay's statement, the book may be appreciated more by aviators than civilians. No better exposition of the inner thoughts of young Army aviators has ever been written, according to other aviators who have read it. Lieut. Lay's power of description and pathos puts him way out in front as a writer.

Sergeant CoVern Price, a veteran of the Spanish-American War and of many engagements in the Philippines, retired from active service at Maxwell Field, Ala., on April 30th, after having served almost 35 years in the U.S. Army.

Sergeant Price served his first enlistment, from April 24, 1898, until May 24, 1899, in the Infantry, and from 1899 until his retirement,his Army service was in the Medical Department throughout.

Over the period of some 39 years since his first entry into the Army, which was at Cleveland, Ohio, where the old Sergeant returned to enlist five different times during his service, he covered the entire United States and most of its possessions. He served four months in Cuba in 1899; was mustered out of the service at Savannah, Ga.; reenlisted in the Medical Department; served in the Philippines until December, 1902; returned to the Islands for another tour of duty; served at Fort McDowell, Calif., during the San Francisco earthquake in 1906; reenlisted July 28, 1907, and served successively at Fort Jay, N.Y., Fort Warren, Mass. New York City, Fort Williams, Fort Levett and Fort McKinley, Maine, and upon his discharge from the Army on July 27, 1910, returned to civil life and resided in Florida.

Reenlisting in the Army during the World War, on December 8, 1917, at Orlando, Fla., he served as Drill Sergeant at the Officers Training Camp at Camp Greenleaf, Ga., until June, 1918, and then accompanied Base Hospital #77 to France. When he landed at Liverpool he recalls shaking hands with King George.

Returning from overseas with the 29th Division, which was demobilized at Camp Merritt, N.J., May 23, 1919, he reenlisted the following day and returned to France, where he remained until December, landing again in New York on Christmas Day. Assigned to Plattsburg Barracks, N.Y., he remained there until discharged on May 25, 1922. For the next ten years, Sergeant Price served successively at Fort Moultrie, S.C.; New Orleans, La.; Camp McClellan, Ala.; Fort McPherson, Ga.; Fort Wadsworth, N.Y., and arrived at Maxwell Field in December, 1932, where he was stationed until the date of his retirement.

Sergeant Price, reaching 64 years of age upon his retirement, looks back upon his many years of Army service with fond memories. He stated that the recruiting slogan 'Join the Army and see the World" has certainly been true in his case, and that he has never regretted a single incident in his long Army career. Upon his departure from his long active service, his fellow soldiers in the Medical Detachment at Maxwell Field presented their oldest soldier comrade with a fitted traveling case along with their best wishes for his future success.

Master Sergeant William R. Church, stationed at Kelly Field, Texas, was retired from active service in the Army on May 31st. Sergeant Church first entered the service on October 26, 1905, and was assigned to the 93rd Company, Coast Artillery Corps, at Fort Stevens Oregon. He has served with the Infantry and the Air Corps since that date. He has been on duty at Kelly Field for the last four years, serving variously in the 41st, 42nd, and 62nd Squadrons. He has ten honorable discharges which bear the notation: "Character: Excellent."

Sergeant Church expects to make his home in Fort Leavenworth, Kansas.

Warrant Officer Frank Bahel retired from active service on April 30, 1937, being at that time stationed at the Middletown Air Depot, Middletown, Pa. He was born in Chester Co., Pa., June 15, 1876, and enlisted in the Army on November 9, 1895. He served as a commissioned officer in the Air Corps during the World War, being appointed a 1st Lieutenant on August 28, 1917, and promoted to Captain on February 19, 1918. Following his honorable discharge as a commissioned officer and his appointment as a Warrant Officer, Bahel served with the Air Corps at Lee Hall, Va.; Langley Field, Va.; Aberdeen, Md.; Burgess Field, Uniontown, Pa.; and Middletown Air Depot. He was specially qualified in property and finance matters, and his efficiency reports showed that he performed his duties in a highly satisfactory manner.

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WRIGHT FIELD COMMENDED FOR FLOOD RELIEF WORK

The following appreciation comes in a letter to Wright Field from Dr. A.T. McCormick, of the State Department of Health, Kentucky:

"In this connection, permit me to say again to you what I have already said to the Chief of Staff in Washington in appreciation of the service you rendered not only to this Department but to the people of the whole Commonwealth of Kentucky during the flood. I tremble to think of what might have happened had it not been for the Army Air Service. Without their really heroic work our inoculation of the potentially infected refugees would have been impossible, and I am grateful to everybody in the Air Corps."

"It is a privilege to be of service in times of such emergency and an equal privilege to learn that service given proved of real value to its recipients," says the Wright Field Correspondent.

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According to a recent press release from the Bureau of Aeronautics, Navy Department, a Cadet of Scouting One, while cross-country in the 'Link Trainer." suddenly decided he was flying through bad weather. The plane rocked and rolled so much that the pilot had difficulty in maintaining his course. Coming out from under the hood to ascertain whether or not the machinery was at fault, the startling fact that an earthquake was in full swing was told him by an agitated operator, and it wasn't included in the regular weather broadcast, either.

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Major Alonzo M. Drake (Captain) Air Corps, is under orders for duty at Detroit, Mich., as Procurement Planning Representative, upon completion of his course of instruction at the Army Industrial College.

WAR DEPARTMENT SPECIAL ORDERS

Changes of Station

To Buffalo, N.Y.: Major Edmund C. Langmead, upon completion of present course of instruction at Army Industrial College, for duty as Procurement Planning Representative for the Air Corps.

To Bolling Field, D.C.: 1st Lieut. Floyd B. Wood, upon completion of present course of instruction at the Massachusetts Instirute of Technology, Cambridge, Mass.

To Edgewood Arsenal, Md.: Captain James F. Phillips from Aberdeen Proving Ground, Md.

To Fort Riley, Kansas: Captain Jack Greer from Langley Field, Va.

To Hawaiian Department: 1st Lieut. Harry E. Wilson, upon completion of his present course of instruction at Air Corps Tactical School, Maxwell Field, Ala. Previous orders revoked.

To Fairfield Air Depot, Patterson Field, Ohio: Captain Raymond E. Culbertson. Previous orders in his case amended.

To Inglewood, Calif.: Captain John S. Griffith from March Field, and Major Kenneth B. Wolfe (Captain) upon completion of present course of instruction at Command and General Staff School, Fort Leavenworth, Kansas, for duty as Air Corps Representative at the plant of the Northrop Corporation.

To Langley Field, Va.: Major Russell L. Maughan (Captain) upon completion of present course of instruction at Army Industrial College; 1st Lt. Hollingsworth Gregory, from Fort Sill, Okla., for duty with the 3rd Observation Squadron.

To Mitchel Field, N.Y.: Major Phillips Melville from the Hawaiian Department.

To Duncan Field, Texas: 1st Lieut. Thomas B. McDonald, upon completion of present course of instruction at Air Corps Engineering School, Wright Field, for duty at San Antonio Air Depot.

To San Antonio, Texas: Captain Nathan F. Twining, upon completion of present course of instruction at Command and General Staff School, Fort Leavenworth, Kansas, for duty as Technical Supervisor, San Antonio Air Depot Control Area.

To Newport, R.I.: Major Max F. Schneider (Captain) from duty as student at the Army Industrial College, Washington, D.C.

To the Philippines: Captain Alden R. Crawford, upon completion of present course of instruction at Command and General Staff School, Fort Leavenworth, Kansas; 1st Lieut. Andrew Meulenberg and 2nd Lieut. John O. Neal, upon completion of present course of instruction at Air Corps Technical School, Chanute Field, Ill.

To Selfridge Field, Mich.: Lieut. Colonel Clinton W. Howard, upon completion of present course of instruction at the Army War College; Major Joseph H. Davidson, upon completion of present course of instruction at Command and General Staff School, Fort Leavenworth, Kansas.

To Wright Field, Ohio: Major Myron R. Wood (Captain) upon completion of present course of instruction at the Army Industrial College, for duty in the Industrial War Plans Section; 1st Lieut. Samuel O. Redetzke, upon completion of present course of instruction at Air Corps Engineering School, Wright Field, Ohio; 1st Lieut. Rudolph Fink, from Selfridge Field, for duty as student at Air Corps Engineering School, reporting not later than August 1st.

To the Philippines: Captain John P. Kirkendall, upon completion of present course of instruction at Air Corps Advanced Flying School, Kelly Field, Texas.

To Washington, D.C.: Lieut. Colonel Harrison W. Flickinger (Major) upon completion of present course of instruction at Army Industrial College, Washington, D.C., for duty as a member of the Aeronautical Board, Office of the Chief of the Air Corps; Major Russell C. MacDonald, from Middletown, Pa., Air Depot, to Walter Reed General Hospital for observation and treatment.

Orders Revoked

Assignment of Captain Guy Kirksey, from Hamilton Field, Calif., to Panama Canal Zone.

Assignment of 1st Lieut. Thomas L. Thurlow, from Wright Field, to Langley Field, Va.

Transfer

1st Lieut. Charles E. Wheatley, Jr., Cavalry, to the Air Corps, April 3, 1917, and upon completion of present course of instruction at Air Corps Advanced Flying School, Kelly Field, to proceed to the Hawaiian Department for duty.

Retirement

Captain Walter Miller, May 31, 1937, for disability incident to the service.

Extended Active Duty for Reserve Officers

2nd Lieut. Francis Keene, Jr., to Brooks Field, Texas, to May 31, 1940.

2nd Lieut. Maurice Milton Beach, Detroit, Mich., to Rockwell Field, Calif., to June 6, 1940.

2nd Lieut. D'Ross Ellis, of Stillwater, Okla., to Brooks Field, to May 31, 1940.

2nd Lieut. Louis Rector Hughes, Jr., of Kansas City, Mo., to Marshall Field, Fort Riley, Kansas, to April 25, 1940.

2nd Lieut. Richard B. Stophlet, of Toledo, Ohio, to Patterson Field, Fairfield, Ohio, to April 18, 1940.

2nd Lieut. George Marshall Murchison, of Grapeland, Texas, to Barksdale Field, La., to May 31, 1940.

2nd Lieut. Donald Earl Meade, of Hays, Kans., to Selfridge Field, Mich., to April 30, 1940.

2nd Lieut. J. Will Campbell, of Dalhart, Tex., to San Antonio Air Depot to May 31, 1940.

2nd Lieut. Sven H. Ecklund, of Lincoln, Neb., to Rockwell Field, Calif., to April 30, 1940.

2nd Lieut. James Marshall Treweek, to Patterson Field, Ohio, to May 2, 1940.

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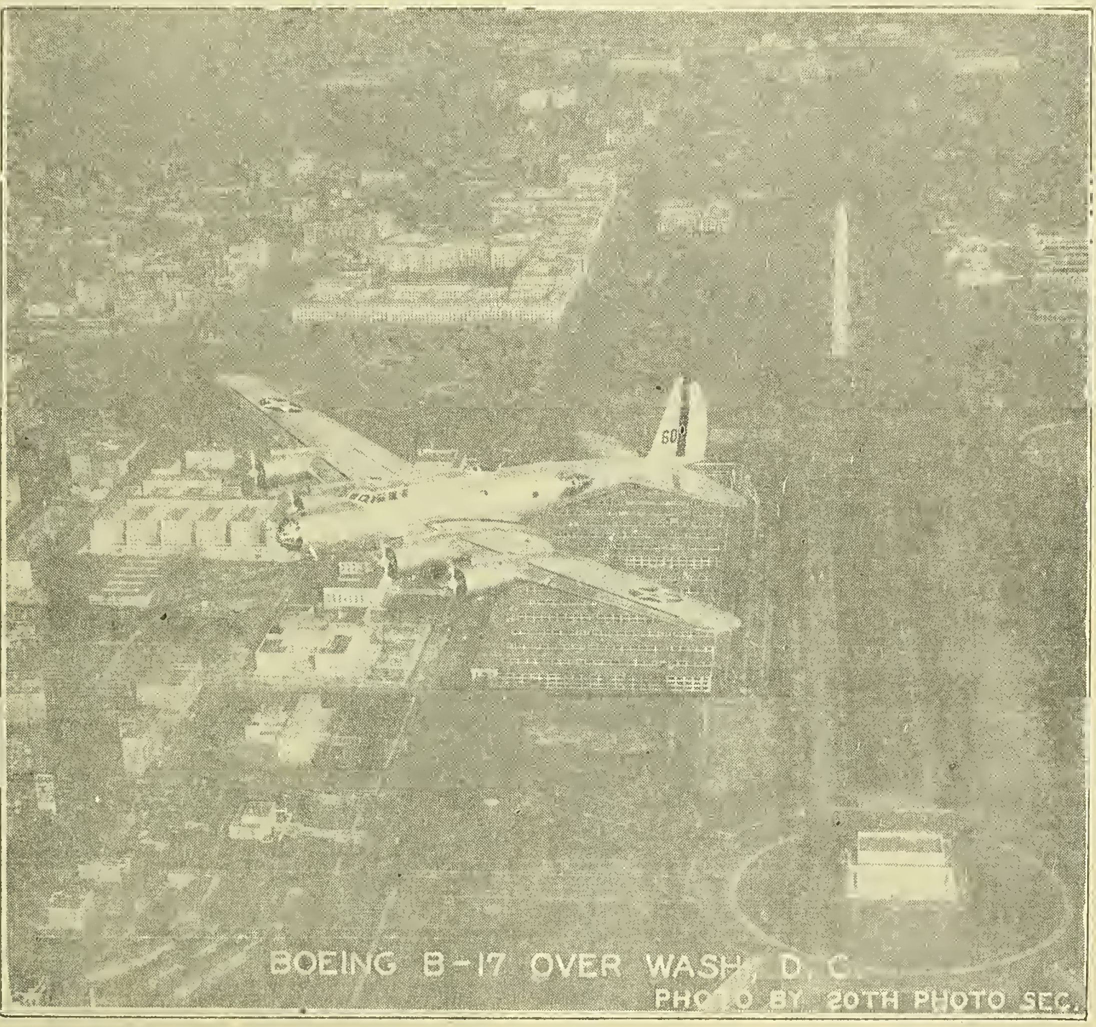
Assignment of 1st Lieut. Robert Lewis Easton from Randolph Field to Bolling Field revoked.

The following named Air Corps officers are under orders to proceed to Pasadena, Calif., to take a course of instruction at the California Institute of Technology, reporting not later than June 30, 1937, viz:

1st Lieuts. Hilbert F. Muenter and Sidney A. Ofsthun, from Randolph Field, Texas, and 1st Lieut. Harold L. Smith and 2nd Lieut. William S. Stone from March Field, Calif.

It is reported that Randolph Field will celebrate the seventh anniversary of its dedication with a full day's program, including a field meet and other features, on June 18th. The field was dedicated on June 20, 1930.

AIR CORPS
NEWS LETTER



BOEING B-17 OVER WASH, D. C.

PHOTO BY 20TH PHOTO SEC.

ISSUED BY
THE OFFICE OF THE CHIEF OF THE AIR CORPS
WAR DEPARTMENT
WASHINGTON

VOL. XX JUNE 15, 1937 NO. 12

VOL. XX AIR CORPS NEWS LETTER NO. 12.
Information Division
Air Corps
June 15, 1937
Munitions Building
Washington, D.C.

The chief purpose of this publication is to distribute information on aeronautics to the flying personnel in the Regular Army, Reserve Corps, National Guard, and others connected with aviation.

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FLYING IS DIFFERENT
By "Pursuiter."

AVIATION history, written and unwritten, is filled with the "close shaves" experienced by those "early birds," aviation's heroes, who, through their engineering knowledge or because of their zest for flying and the adventures it offered have contributed so much to the aeronautical art. And if you do not want to take my word for it, just spend a little time around an operations office or hangar, military or commercial, when the ceiling's zero and the land-bound pilots are in a reminiscent mood. When they set up the hot air "wind sock" and really start "hangar flying," there naturally arises in the listener's mind this question: What would the status of aviation be today if the Great Barber had decided to make those close shaves just a little too close and, before they had performed their good work, presented our aerial pioneers with a pair of celestial wings and set their homing devices on the beacon of the Great Beyond where engine failures and "crashes" are unknown? (Assuming that all GOOD aviators are properly rewarded).

The escape of one of these men of destiny is etched deeply in my memory. I was flying at 7,000 feet, above a layer of clouds located at about 5,000 feet, as a member of a formation of twelve SE-5 single seaters. We were practicing three-ship attacks on an old DH-4 as a part of advanced training at Kelly Field, Texas. The system we were using was for three ships in V formation to attack at one time. The leader would bring his formation down in a terrific dive, pass below the target plane and then pull up into a stall underneath while his wing men attacked simultaneously from right and left. The formation in which I was flying had just completed its attack and was climbing for altitude to the rear of the target ship when I noticed another formation starting its dive. The leader passed underneath and the wing men came in from either side. Suddenly the two wing ships seemed to melt together, and pieces of fabric torn loose by the flying propellers started floating down toward the clouds. A collision in mid-air!

The two planes hung momentarily in space and then still together spun down into the clouds and out of sight. Neither pilot had used his parachute. The entire formation broke up in the excitement and each man picked himself a hole in the clouds and dove through. As I came out under the clouds, there directly beneath me was the unmistakable gasoline fire of the crashed airplanes. With mingled hope and dread I searched the sky around us. Finally I spotted one parachute floating lazily down, and then, after what seemed like an interminable wait, I saw another.

Dangling from one of those chutes was Charles Augustus Lindbergh. Three more times in the next two years he was saved by his parachute in order that he might fulfill his destiny.

Approaching the subject from a slightly different angle, let us assume that the Wright Brothers never felt that irresistable urge to abandon their bicycles and take to the air. Was it the finger of Destiny that prodded them on? Would another name be engraved on the monument at Kitty Hawk? Would there have been a first flight? Probably, but not until years later, and aviation would have been retarded just that mugh. And supposing Leonardo Da Vinci's flying machine had really flown instead of crashing with his mechanic, Astro da Peretola. When one considers the progress that the airplane has made in the brief span of 33 years since Kitty Hawk, one wonders what might have been accomplished in the five centuries since Leonardo.

Innumerable questions are brought to mind by the thought. For example: What could the British have done to the American colonists with a couple of good Attack groups? Would Napoleon have lost the battle of Waterloo if he had had a few Observation planes? Would Lee have been surprised at Gettysburg if he had been similarly equipped? Would the Kaiser have had the temerity to oppose the world if the nations had had the benefit of 500 years' development of their air forces? With Bombardment airplanes of unbelievable ranges and bomb-carrying capacity, which, judging from present developments, would have been created hundreds of years ago, the oceans would have been made untenable for battleships, and navies would have long ago been thrown into the discard.

But let us return to our men of destiny. Volumes could be written of their narrow escapes from accidents and disease, or how some incident which seemed inconsequential at the time directed their footsteps upon the path of glory. Aviation is not alone in this. Supposing F.D.R. had not won his fight with infantile paralysis!

Enough for the men who did escape. They have taken their place in the firmament. What of those who did not escape? Certainly among them there were many whose kinetic ability along aeronautical lines would have had a tremendous effect upon the development of aviation had they not been "bumped off," "washed out" or otherwise pushed aside by the hand of fate. Those are the heroes who should be brought to the attention of the world. And it is in an effort to do just that that these lines are written.

There is, for instance, the man who many believe contributed more than any other individual to the advancement of flying; one Otto Fliegenschnell. Born in the early nineties, of German-American parentage, in a little town located on the cliffs overlooking the Hudson River, little Otto, during his early youth, gave no indication of developing into a prodigy.

But by the time he had graduated from high school two traits had shown themselves which were most irritating to his stolid German father, who made a comfortable living running a meat market. One of these was an unbridled passion for mathematics, which his father could not in any way apply to the production of bigger and better winerwursts; the other, and the most objectionable, was his habit of spending all his spare time, when he might have been helping in the meat market, lying on his back in some open meadow watching the seagulls circle lazily over the river, or climbing the precipitous cliffs in search of falcons which he captured in order that he might make a close-up study of the structure of their wings.

He followed the flights of the Wright Brothers avidly, and it was not surprising that when the World War started he learned to fly himself and made an enviable record overseas with the Lafayette Escadrille. After the war he continued his flying as a free lance test pilot. In 1934, while testing a sleek low-wing monoplane, he climbed to 20,000 feet and headed straight for earth in a terminal velocity dive. When the airspeed indicator showed well over 600 miles per hour, he started to ease back on the stick to pull the plane out of the dive but found that the controls had no effect. He "bailed out" with great difficulty, while the plane continued on to its destruction. Later a model of the plane was tested in a high speed wind tunnel, and it was found that the wings of the conventional design completely lost their lift when they reached the speed of sound (750 miles per hour), and this is where our hero stepped into the breech by designing a type of wing which would retain its lift at any speed. Because of its design, wing resistance became practically negligible. Speed was multiplied many times until, with the engines available, a thousand miles per hour was common. Commercial schedules, military tactics, trans-oceanic flying, all were revolutionized. San Francisco was but a little over two hours from New York. The oceans no longer acted as a bulwark in our national defense. Overnight the world shrank, in effect, to one-fifth of its actual circumference. The Fliegenschnell airfoil became a byword among the aeronautical engineers of the world.

But I am getting slightly ahead of my story for, unfortunately, one day when young Otto was climbing one of his native cliffs to snatch a young falcon from its parental nest he leaned just a little too far. His foot slipped and he fell the two hundred feet to the rocks below, landing with a thud which flattened him out beyond all recognition. So, from that day until this none of what I have related has ever happened.

Then there is the case of Jacques De L'air, whose gasoline-driven turbine, because of its terrifically high speed and lack of friction, due to moving parts, developed amazingly high horsepower per unit weight of power plant, and completely revolutionized the design of aircraft and automobiles except that one day when his mother was lifting little Jacques from his crib she dropped him head foremost on the floor and he grew up to be a jibbering idiot.

Last, but not least, we have that Swiss engineer (the name escapes me at the moment) who invented the hermetically sealed internal combustion engine, fuel tank and fuel reclamation plant, so that with one charging of a ridiculously small fuel tank the happy cycle would continue indefinitely. Two days before the idea flashed to his mind he went for a climb on his favorite Alp and an avalanche buried him very deep.

So, as Parke Cummings might say, when you future chroniclers of aviation history are preparing your columns and feel tempted to record that aviation would be different IF -- you must also inscribe -- Aviation is different BECAUSE ---.

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One of the new Y1B-17 Boeing Bombers, in a night flight from Langley Field, Va. to Kelly Field, Texas, negotiated the distance in nine hours, taking off at 9:00 p.m., May 27th, and reaching destination at 6:00 a.m. the next day. The purpose of the flight was training in celestial navigation, as part of the work of the navigation school at Langley Field. The plane was piloted by Major C.V.Haynes, who was accompanied by three officers and five noncommissioned officers.

THE BRITISH SYSTEM OF PILOT TRAINING

Air Commodore R. Leckie, who is the Director of Training in the British Air Ministry of the British Royal Air Force, inspected the Advanced Flying School, Kelly Field, Texas, on May 21st. He was extremely interested in knowing that the United States has the same problems as they have in England. He stated that it gave him a comfortable feeling to know that the British are getting the same results as the Americans.

Colonel Lohman, Air Corps, Assistant Commandant of the Advanced Flying School, escorted the British visitor around the post and entertained him for lunch.

Air Commodore Leckie said that the British system of pilot training was similar to ours. Up to recently the duration of the course was one year, but due to the expansion of the Royal Air Force and the need for pilots, it was found necessary to shorten the course to 37 weeks, with a total of 150 hours' pilot time.

The British system of training consists of the same three phases as ours, i.e., primary, intermediate (or basic), and advanced. All their primary training, however, is done by thirteen civilian flying schools which are under contract with the Air Ministry. The students remain on civilian status, but they draw pay until they complete their primary pilot training. At this time they are taken into the Royal Air Force and given short service commissions as "flying officers," for a period of five years. They are sent to one of the ten Royal Air Force pilots' schools where they complete their basic and advanced pilot training. These phases include pilot training on modern single-engine and bi-engine training airplanes. Obsolete tactical airplanes are no longer being worn out by using them for training students. The students also receive training in gunnery and bombing, but little or no cross-country flying. These are purely pilots' schools, there being additional schools for those officers who are to specialize in Observation or flying instruction.

Upon completion of the course at the pilots' schools, students are sent to duty with tactical organizations, and at the end of five years' service they are returned to civil life as Reserve officers. A large number of them receive positions as flying instructors in the civilian flying schools which teach primary flying. A few of the most proficient pilots among them are selected to remain in the Royal Air Force and may secure an additional tour of five years' service, and eventually a permanent commission. However, the majority of officers having permanent commissions come from the Royal Air Force School at Cranwell. This school compares with the British Army School at Sandhurst, which is similar to West Point. The course at Cranwell lasts two years. Students receive approximately 300 hours' pilot training, as well as a thorough training in ground subjects, before they receive their commissions.

Air Commodore Leckie is responsible for the training of enlisted mechanics, also. Their system of securing mechanics is to enlist young men and boys (minimum age 16 years) for a 12-year period. Not having as good an education as the enlisted men in the U.S. Army Air Corps, they spend the first three years as apprentices. During this time they work half a day in shops and the other half in school. The studies covered are comparable to our technical high schools. They then go to tactical organizations for full duty as mechanics. Upon the completion of this enlistment, they may reenlist for another nine years, at the end of which time they become eligible for retirement. The British visitor stated that at the present time there is one school in operation which is training 4300 apprentices, and that another school of the same capacity is being built.

Air Commodore Leckie appreciated the courtesies shown him on his visit and stated that his stay had been very enjoyable.

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FLIGHT TEST OF NAVIGATION EQUIPMENT

The Douglas C-33 airplane, assigned to the Equipment Branch of the Air Corps Materiel Division, departed from Wright Field on May 25th with a crew of six for New Orleans, La., with an ultimate destination of Brownsville, Texas, for the purpose of testing navigation equipment. The take-off from New Orleans to Brownsville was made at 1:25 a.m., May 26th, and the over-water flight was made during hours of darkness. The return flight to New Orleans was accomplished the same day, the take-off from Brownsville being at 7:20 a.m.

Celestial navigation was used throughout the flight, with the aid of both the experimental gyro-stabilized drift meter, and experimental drift signals were made on both over-water flights, these two instruments performing satisfactorily. The Type A-4 computer was employed in the reduction of observations and, on occasion, the Hydrographic Office Publication No. 214.

All navigation equipment functioned in a satisfactory manner. The airplane returned to Wright Field on May 27th.

A report is being prepared, describing the results obtained with the various items of equipment.

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STUDENT NAVIGATION FLIGHT

ON Monday, May 17th, the students of the Advanced Flying School at Kelly Field, Texas, took off on their Maintenance Navigation Flight. The itinerary called for stops at the University of Oklahoma, at Norman, Okla.; the Agricultural and Mechanical College at Stillwater, Okla.; the Oklahoma Military Academy at Claremore; the University of Kansas, at Lawrence; the University of Missouri, at Columbia, and the University of Arkansas at Fayetteville.

The first day's flight saw the Observation Section, under the command of Capt. O.P. Weyland, going to Fort Sill direct, and thence to a rendezvous at Norman, Okla., at 3:00 p.m. This flight consisted of 26 Observation airplanes, type O-25, O-19 and BT-2. Sixteen of these, in charge of 1st Lieut. Edgar R. Todd, landed on the Oklahoma University Polo Field, and remained there overnight. The remainder landed at Oklahoma City Airport for the night.

Nine Bombardment airplanes made the same itinerary as the Observation Section, and landed at Oklahoma City.

The Pursuit Section of 20 P-12's and 4 BT-8's, under the command of Major John V. Hart, and the Attack Section, with 11 A-12's and one BT-8, under Capt. Glenn C. Jamison, flew to the rendezvous at Oklahoma University by way of Hensley Field at Dallas, Texas. They all landed at Oklahoma City, where the students were immediately taken to the University by trucks.

While in the vicinity of Oklahoma City, Lieut. Egurrola, of the Mexican Navy, had a forced landing due to motor trouble. A successful landing was accomplished with minor damage to landing gear. The students were entertained and quartered by the Fraternities at the University.

On Tuesday, all flights rendezvoused at Oklahoma A. & M. College at Stillwater. The Pursuit Section gassed up, had lunch, and flew to the University of Missouri at Columbia. The Attack Section flew to Lawrence, Kansas, to visit the University of Kansas.

On Wednesday, these two Sections rendezvoused at Claremore, Okla., and had lunch at the Oklahoma Military Academy. Then all Sections rendezvoused at Fayetteville, Arkansas, at 4:00 p.m. All planes landed individually on narrow runways, with no difficulties. The planes were maintenanced and staked down for the night, and the students were again quartered at fraternities.

On Thursday, all Sections returned to Kelly Field, with students making individual navigation flights, departing at 10-minute intervals.

The Attack returned via Muskogee and Barksdale Field; the Pursuit via Hot Springs and Barksdale Field; the Bombers via Muskogee and Dallas; and the Observation, via Little Rock, Ark., made a night flight from Dallas to Kelly Field. The last plane was in at 10:55 p.m.

The entire flight was unmarred by any serious airplane troubles, and the students gave excellent demonstrations of the perfection which they have reached on this, the eve of graduation from the Air Corps Training Center.

The flight was most ably commanded by Major Robert D. Knapp, who not only made the original survey and flight plan but consummated a most successful trip with a total of 74 airplanes.

Whereas the dual purpose of the flight was that of navigation and maintenance, the students of all the universities were told of the facilities offered at the Air Corps Training Center to further their education.

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A GRACIOUS ACT

Private John B. Smith, Air Corps, recipient of the Cheney Award for 1931, is a firm believer in reciprosity. Recently he became the proud father of a son, whom he named John Cheney Smith.

The Cheney Award was presented to Private Smith in recognition of his heroism, loyalty and devotion toward an officer of his service. Trapped in the burning wreckage of a crashed airplane, the helpless pilot, Lieut. C.W. Causey, was released therefrom only through the valiant efforts of Private Smith, who slid headfirst into the blazing cockpit and unfastened the pilot's shoe which was tightly wedged in the rudder bar.

Advice of the naming of young John Cheney Smith was received from Mrs. Ruth Cheney Streeter, sister of the late Lieut. William H. Cheney, of the U.S. Air Service, who was killed in an air collision at Foggia, Italy, on January 20, 1918. Mrs. Streeter and her mother, Mrs. Mary C. L. Schofield, donated the Cheney Award in memory of the deceased of the American war-time pilot.

Private Smith, elated over receiving the Cheney Award, is fond of alluding to himself as "Hero Smith."

Mrs. Streeter's comment on Private Smith's gracious act is that he saw his duty and did it, and that it was really rather sweet of him.

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Colonel John B. Brooks, Air Corps, a member of the War Department General Staff, recently visited Randolph Field for a few days. He is scheduled to become the Commandant of the Primary Flying School in the near future, replacing Col. Henry W. Harms, who is leaving to attend the Army War College.

THE GHQ AIR FORCE MANEUVERS ON THE WEST COAST

SUPPLEMENTING the article in the previous issue of the News Letter on the Maneuvers of the GHQ Air Force on the West Coast is the following, submitted by the Hamilton Field Correspondent:

The GHQ Air Force concentration and exercises were held in California during May, 1937. Major General Frank M. Andrews flew his Douglas Transport to California and directed the exercises. Only the 1st and 2nd Wings participated directly in these maneuvers. The 63rd Coast Artillery (AA) from Fort MacArthur, Calif., commanded by Lieut. Colonel Claude M. Thiele, was attached to the 1st Wing for the period of the exercise.

The operations during the one-month period, lasting from May 1st until May 31, 1937, were designed mainly for the testing of the Air Corps tactics with full strength units and the organization and efficiency of the various groups and air bases.

An area stretching from March Field to Hamilton Field, about 100 miles inland from the sea and 400 miles up the coast, was directly involved in these exercises with a number of California towns being used as advance airdromes. These flying fields were at Bakersfield, Delano, Merced, Fresno, Stockton, Visalia and Muroc Dry Lake. The latter point, the official bombing and gunnery range of the 1st Wing stationed permanently at March Field, was chosen for actual combat and battle operations, due to its ideal location in the midst of the Mojave Desert, which permitted the use of gas and bombs without endangering civilians. In all, the number of officers, men and planes participating during the May maneuvers were figured at 425 officers, 3400 men and about 350 planes. Among the officers are included about 70 Flying Cadets.

The force was divided into two Wings (1st and 2nd). The 2nd Wing, under the command of Brigadier General Gerald C. Brant, was chosen as the attacking force (enemy), with its base of operations at Hamilton Field and with units dispersed throughout the San Joaquin Valley. The 1st Wing, commanded by Brigadier General Delos C. Emmons, was the defending force. Headquarters of the 1st Wing was at March Field, and the tactical units which were composed of the 1st Pursuit Group were stationed at Muroc Bombing and Gunnery Range.

The Concentration

Since none of the GHQ units stationed throughout the nation were operating at full strength - some groups consisting of but one flight, others of two - it was necessary to "borrow" aircraft and personnel from all such units not in actual operation during the May Maneuvers, thereby rendering them practically inoperative during the period of the exercises. In other words, being only slightly over one-third of its authorized strength, the GHQ units were forced to use all planes and personnel to form two full strength wings. Units from Mitchel, Langley, Selfridge, Barksdale and western air bases participated with troops, materiel and equipment being moved within six days from all points to the San Joaquin Valley and Muroc Dry Lake scenes of activity. Troops were transported by trains, bus, motor convoys and airplanes. The latter phase found its first trial of that sort with 12 Douglas, two Lockheed and a number of older type transport planes involved. March Field, as the GHQ temporary headquarters, and Hamilton Field, were called upon to furnish supplies, equipment for men, general utensils and material, ammunition, repair facilities, tents and camping outfits, communication, meteorological service and hospitalization.

Several flights with sick were made, transportation for these men being furnished by ordinary aircraft or hospital transports in case of emergency. The airplane shuttle service for men to and from the West Coast before and after the concentration lasted for 16 days with some of the transport crews spending above 100 hours in the air during that short a time. A regular freight and mail service during the maneuvers was installed from March Field to "all points north" on daily schedule, planes and pilots being furnished by March Field.

Maneuver Operating Period

The two opposing forces during the operating period were stationed as follows:

1st Wing (defending force):

1st Wing Headquarters: March Field.
1st Pursuit Group: Muroc Dry Lake.
63rd Coast Artillery: Muroc Dry Lake.
March Field Air Base.

2nd Wing (attacking force):

2nd Wing Headquarters: Hamilton Field.
7th Bombardment Group Hq. with one tactical Squadron each: Fresno, Merced and Stockton.
3rd Attack Group Hq.: Bakersfield, and with one tactical squadron each at Delano and Visalia.
88th Reconnaissance Squadron: Hamilton Field.
Hamilton Field Air Base.

Attached to the defending force was the 63rd Coast Artillery with four long-range AA guns, six .50 cal. AA machine guns, sound and searchlight units.

Tactical employment of aircraft weapons was left to the individual Wing Commanders. Heavy Bombers spent a minimum of 6 hours in the air daily, Pursuit and Attack craft not less than 4 hours. In most cases this time limit was greatly exceeded.

Targets were located at Muroc Dry Lake and Salt Lake, simulating aircraft factories, docks, warehouses and oil reservoirs. Muroc itself feigned to be the city of Los Angeles. Anti-aircraft units covered an area of several miles around the main camp at Muroc, and war-time camouflage was successfully employed by all units.

Beginning May 10th, the 24-hour periods were divided into two intervals, each lasting from four to six hours. All combat operations took place during these hours. Lack of personnel and equipment prevented alerting crews for 24-hour periods. In accordance with plans, the defending force was not permitted to follow the invaders and counter-attack, but were allowed to engage the enemy as soon as he entered the defended area.

Another important phase in the exercise was the civilian intelligence net provided by the Southern California Edison Company and employed successfully by the Muroc anti-aircraft units. Having secured full cooperation on the part of the company's employees, reports on enemy movements were phoned in sometimes within 3- seconds after a flight had passed the hidden observers' outpost, and counter measures could be taken in time. The response on the part of the civilians employed was whole-heartedly, and gave proof of how much such information could be depended on in case of war.

Besides the actual testing of fighting equipment, GHQ authorities tested a new invention, the throat microphone, an instrument which enables a pilot to "talk" to other ships in spite of the oxygen equipment carried on high altitude flights. Such practice was given by a long range bombing mission at the Salt Lake targets at an altitude of 21,000 feet. Tests were considered completely satisfactory.

All combat operations included day and night flying. During night operations, parachute flares were used to light up objects to be bombed. Smoke screens were used on several occasions, largely depending on weather conditions. The following subjects were taken into consideration and tested during the maneuvers: Tactical employment of Bombardment, coordination of Attack and Bombing Aviation, coordination between Pursuit and anti-aircraft action, bombing efficiency, aerial gunnery (camera guns), Pursuit interception, employment of smoke and chemicals by Attack Aviation, interception of invading aircraft by anti-aircraft units, effects of gas (morale), effect of gas with adequate protection (gas masks), gas alarm, airdrome defense, intelligence by ground and air.

De-Concentration

"Halt" to all war activities was called midnight, May 21st. Until midnight, however, everyone was still on the alert and raids by enemy aircraft came as late as 10 minutes before the enforcement of the "armistice" order.

May 22nd was classified as "maintenance" day, with equipment being made ready for evacuation. The first flight of 28 Boeing Pursuit ships from Barksdale Field left Muroc Sunday morning, May 23rd.

The shuttle service between the East and West Coasts once more came into operation, and individual units returned to their home bases. The whole GHQ Air Force, that is, all units which were involved in the maneuvers, were expected to be back at their own stations by midnight, May 31st. Considering the efficiency with which the whole exercise was handled, special mention ought to be given to March and Hamilton Fields as the "bases" of operations.

Both of these Air Bases fully came up to demands, in spite of the fact that all maintenance, service and supply sections were taxed to the limit. So, for instance, the supply service established by March Field during the GHQ maneuvers (and prior during the 1st Wing exercises) involved ten airplanes and twelve trucks. The planes carried a total weight of 110,606 lbs. and flew 17,171 miles, carrying over 130 men as personnel. The trucks transported a total weight of 177,650 lbs., traveled 10,094 miles, with a personnel of 121. In all, transport planes made 87 flights; and trucks, 58 trips. These figures are up to and including May 22, 1937. The arrangements, which were in the hands of Major F.F. Christine, Air Corps, were such that an officer and some enlisted personnel were stationed at the various operating bases under direct control of the Air Base Commander, Colonel John H. Pirie, of March Field, for the purpose of handling all supplies at railheads, procurement and distribution. Requests for needed supplies were made by radio, and transportation was kept at all times available. In some cases special containers for transportation was used to prevent spoiling. In the case of extended exercises, ground efficiency was as important as air efficiency, for without material and mechanics to handle ships and necessary supplies no war can be fought successfully.

Purpose and Critique.

Newspapers have brought the "defense angle" so much into play in connection with the GHQ Maneuvers that this impression has apparently carried all votes. According to General Andrews, these exercises were designed mainly as an efficiency test for the GHQ Air Force, test of mobilization facilities of Hamilton

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CHANGES IN AIR CORPS ORGANIZATIONS

Under orders of the War Department, effective June 1, 1937, a number of changes were effected in Air Corps organizations, which involved the demobilization of some units, the creation of new units, and the transfer of personnel to other stations.

The 21st Photo Section, which had been stationed at Scott Field, Belleville, Ill., was rendered inactive and allotted to the 6th Corps Area.

The 9th Airship Squadron, Scott Field, was redesignated as the 1st Observation Squadron and transferred to Marshall Field, Fort Riley, Kansas, with personnel as follows: 2 Master Sergeants, 2 Technical Sergeants, 7 Staff Sergeants, 7 Sergeants, 7 Corporals, 22 Privates 1st Class, and 23 Privates, total 70. The allotment of grades to the 1st Observation Squadron, as of June 1, 1937, is as follows: 2 Master Sergeants, 1 First Sergeant, 3 Technical Sergeants, 11 Staff Sergeants, 10 Sergeants, 10 Corporals, 33 Privates 1st Class, and 60 Privates, total 130.

Flight A, 16th Observation Squadron, Langley Field, Va., without personnel or equipment, was transferred to Pope Field, Fort Bragg, N.C.

The Headquarters, 16th Observation Squadron, which has been inactive in the 8th Corps Area, was rendered active, with station at Fort Bragg, N.C.

The 12th Observation Squadron, Brooks Field, Texas, less Flight C, with personnel, including 3 Regular Officers, one Master Sergeant, one First Sergeant, two Technical Sergeants, eight Staff Sergeants, four Sergeants, four Corporals, twenty Privates 1st Class and thirty Privates, total 70, was transferred to Fort Knox, Ky. Effective June 1, 1937, the strength of the 12th Observation Squadron, less Flight C, is increased by 25 Privates, or a total personnel of 95.

Flight C, 12th Observation Squadron, is transferred from Brooks Field to Post Field, Fort Sill, Okla., without personnel or equipment.

Headquarters and Headquarters Squadron, 12th Observation Group, is rendered inactive, with allotment to the 8th Corps Area, transferring personnel, grades and ratings to Moffett Field, Calif., for assignment to the 82nd Observation Squadron, which is to be constituted at that station. The personnel transferred comprise 4 Regular Army officers, 1 Master Sergeant, 2 Technical Sergeants, 7 Staff Sergeants, 10 Sergeants, 12 Corporals, 26 Privates 1st Class, 17 Privates, total 75.

The 1st Photo Section, Brooks Field, Texas, redesignated as the 3rd Observation Squadron, and transferred to Langley Field, Va., with one officer, 3 Technical Sergeants, 8 Staff Sergeants, 1 Corporal, 11 Privates, 1st Class, and 27 Privates. Transferred from Scott Field, Ill., to Langley Field, for assignment to the 3rd Observation Squadron: 1 Master Sergeant, 7 Sergeants, 6 Corporals, 11 Privates, 1st Class, and 5 Privates, total 30.

Flight E, 16th Observation Squadron, Fort Sill, Oklahoma, is demobilized, all personnel, equipment and records to be incorporated in Flight C, 12th Observation Squadron, transferred to that station from Brooks Field, Texas.

The 19th Airship Squadron, Moffett Field, Calif., is redesignated and consolidated with the 3rd Balloon Squadron, heretofore inactive in the 8th Corps Area, as an active unit, with station at Fort Lewis, Wash., enlisted strength as follows: 1 Master Sergeant, 1 First Sergeant, 1 Technical Sergeant, 9 Staff Sergeants, 10 Sergeants, 10 Corporals, 33 Privates, 1st Class, and 65 Privates, total 130.

Enlisted strength of 91st Observation Squadron, Fort Lewis, Wash.: 2 Master Sergeants, 3 Technical Sergeants, 11 Staff Sergeants, 10 Sergeants, 10 Corporals, 33 Privates 1st Class, 66 Privates, total 134.

The 15th Photo Section, Fort Lewis, Wash., is rendered inactive, with allotment to the 9th Corps Area.

The 82nd Observation Squadron constituted as an active unit at Moffett Field, Calif., with an enlisted strength of 130, comprising 2 Master Sergeants, 3 Technical Sergeants, 11 Staff Sergeants, 10 Sergeants, 10 Corporals, 33 Privates, 1st Class, and 61 Privates, total.

Enlisted strength of Base Headquarters and 9th Air Base Squadron, Moffett Field, Calif., 155, comprising 3 Master Sergeants, 1 First Sergeant, 2 Technical Sergeants, 12 Staff Sergeants, 11 Sergeants, 12 Corporals, 38 Privates, 1st Class, and 76 Privates.

Transferred from Scott Field, Ill., to Mitchel Field, N.Y., enlisted personnel as follows: 2 Corporals, 4 Privates, 1st Class, 3 Privates, and 1 Sergeant, total 10.

Flight D, 16th Observation Squadron, Fort Riley, Kansas, demobilized, all personnel, equipment and records incorporated in 1st Observation Squadron (organized from the 9th Airship Squadron, Scott Field, and transferred to Marshall Field, Fort Riley, Kansas.

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Effective June 1, 1937, Technical Sergeants Brainard D. Booth (Randolph Field) and Neal Bray (March Field) were appointed to the grade of Master Sergeant, while Staff Sergeants Frank J. Birk and John C. Dodd, of March Field, Calif., and Louis T. Silva, of Hamilton Field, Calif were appointed to the grade of Technical Sergeant.

THE CHANUTE FIELD GLEE CLUB

In mid-summer of 1936, there began a movement among the enlisted men of Chanute Field to organize a men's glee club. Step by step the organization developed into a capable singing group and is now composed of over fifty voices. Its director is Chaplain Wallace I. Wolverton. The men chose as a name, "The Wing Chorus." A male quartet selected from the organization has the name, "The Ailerons." The organization insignia is a winged sixteenth note drawn in such fashion as to suggest a Pursuit ship in flight.

The Wing Chorus is one of the most active organizations of an extra curricular nature at the Air Corps Technical School. It has sponsored and taken a prominent part in three entertainments at Chanute Field during the past year. The most recent was a first annual spring concert given in Rantoul. This performance was the first in a spring series which took the men to Decatur and Bloomington, Ill. The Chorus has given fifteen performances in central Illinois during the past year. Return engagements and other invitations promise a very full program for the coming year.

The organization is more than just a men's glee club. In its membership are to be found a tap dancer, a soft shoe dancer, two pianists, comedians and a master of ceremonies. The program is, therefore, enlivened by specialty numbers. The music repertoire of the Chorus would compare favorably with that of the average college glee club. Everywhere the organization has been enthusiastically received. There is something unique in hearing a smart-looking group of soldiers sing a fast-moving program of men's music. The public is both surprised and delighted.

Most people have no such notion of soldiers. But why should not the soldier get a thrill out of singing, and singing well, good rousing music?

Every Air Corps man who is sent to Chanute Field for school should, if he has some singing ability, join the Wing Chorus. His stay at this station will be made most pleasant if he becomes a member of the organization. In addition to the pleasure of going on trips and being entertained royally by civilian groups, the outfit very frequently entertains itself with Dutch suppers and banquets. A ramshackle house in the country, properly dubbed "The Broken Wing Inn," has been the scene of some of these parties.

Recently in a restaurant in a nearby city, when the chorus was having some refreshments before taking the trip home, they broke out into song. They were not thrown out. The patronage called for more and the management called for encores.

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"CHINESE ARE "UP TO SNUFF."

Touching on the participation of the 35th Pursuit Squadron, Langley Field, Va., in the maneuvers of the GHQ Air Force on the West Coast, the Correspondent of that outfit reports that the week end side trips to Los Angeles and San Francisco offered a welcome diversion from the monotony of camp life. One of the 35th pilots, while in Frisco's Chinatown, bought a Chinese newspaper as a souvenir. Upon opening the paper he discovered to his amazement a picture of the Squadron's own planes, including himself and two other pilots. Clever people, these Chinese.

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AIRMEN DO NOT TAKE KINDLY TO HORSES

Two members of the 36th Pursuit Squadron, returning to Langley Field from participation in the maneuvers of the GHQ Air Force on the West Coast, were forced down by inclement weather near Mitchell Station, Alabama. The News Letter Correspondent states that Lieut. Glenn Thompson and Sergeant Baker rounded out their Army knowledge by taking full advantage of an opportunity to "service test" the basic means of transportation of the Cavalry. Comandeering two horses, they rode five miles to the nearest telegraph station. This trip was prolonged due to a rough motor and excessive head temperature on Sergeant Baker's fiery steed. The Sergeant asserts that henceforth he will have nothing to do with foul plugs. Lieut. Thompson gives it as his fixed opinion that helmets, goggles and flying boots are even more necessary on horseback than when in the air.

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AIR RESERVE PILOTS "GO COMMERCIAL."

Four Air Reserve pilots, on extended active duty at Langley Field, Va., recently terminated their active connection with the Air Corps to accept positions with commercial airlines. Second Lieuts. Mathias F. Junger, Robert R. Reed and Lowell F. Johnson, who were on duty with the 96th Bombardment Squadron, have accepted employment as pilots with the Eastern Air Lines. Second Lieut. A. LePenske accepted a position with the

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TRAINING AT THE AIR CORPS TECHNICAL SCHOOL

The importance of the Air Corps Technical School, Chanute Field, Rantoul, Ill., is now being realized by the Air Corps at large, judging from the great amount of correspondence received from GHQ Air Force units and Air Corps stations, with reference to enlarging and shortening the various courses taught at this school, in order to furnish the service with the demand for trained personnel.

Reports received indicate a serious shortage of trained specialists, and that the number of replacements being furnished are far from adequate, notwithstanding the fact that approximately twice the number of students were trained during the school year 1936-37 than in the preceding year.

Provision during the year has been made for five additional enlisted specialist courses, namely, Bomb Sight Maintenance; Electrical Specialists; Instrument Specialists; Propeller Specialists, and Carburetor Specialists. The courses are from six to eight weeks in length, training six men in each class. The students must be especially qualified and recommended for training in the specialized subjects.

The proposed schedule of instruction for the next school year (1937-1938) calls for the training of 1250 enlisted men. Nine hundred of these students will be men selected from the various Air Corps stations, and who will not be required to pursue the course in basic instruction as heretofore. The remaining 350 will be men especially qualified, and who are enlisted for Air Corps, Chanute Field (unassigned) for the express purpose of pursuing a course of instruction at this school. They will be required to undergo a course in basic instruction.

The Commanding Officers of Squadrons and Detachments throughout the Air Corps make special trips to Chanute Field to interview these unassigned students in school with a view to securing their assignment to their station upon graduation. Also numerous communications are received weekly requesting information on the number of students graduating from various courses, who are available for transfer. One month prior to graduation, a report is rendered to the Chief of the Air Corps, stating course and date of graduation of each unassigned student. The Office of the Chief of the Air Corps then assigns these unassigned students, upon graduation, to stations where their services, as trained specialists, are in demand.

The program of instruction for the next school year is being revised in accordance with the needs of the service. Most courses are being shortened by several months, and the assigned students (those from other stations) will be entered in classes separate from the Air Corps, Chanute Field (unassigned) students. In shortening the courses, it will permit the training of the increased number of students during the next school year, with the present housing facilities, and the addition of a number of tents, some of which are in use at the present time.

No material changes are being made in the courses for Regular Army Air Corps officers, or National Guard and Reserve officers.

A catalogue, consisting of 107 pages, including sixty illustrations, and giving the history, function and program of instruction of the Air Corps Technical School, was distributed to the Service during the last month. Additional copies of this publication may be secured by applying to the Secretary, the Air Corps Technical School, at a cost of 25 cents per copy.

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Air Reserve Pilots "Go Commercial."

(Continued from Page 8).

United Air Lines, with base at Salt Lake City.

The Correspondent of the 96th bemoans the fact that, as a result of the departure of the three young Reserve officers, the Squadron is faced with an acute shortage of Reserve pilots.

The 49th Bombardment Squadron Correspondent says that his outfit is sorry to see "Eddie" LePenske leave, but wishes him luck in his new venture.

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LANGLEY SQUADRON MOVES TO NEW LOCATION

Headquarters and Headquarters Squadron, 2nd Bombardment Group, Langley Field, Va., was moved to the first floor of Building No. 116, which was formerly occupied by the Post Exchange Restaurant. On May 12th, nearly the entire squadron was moved to this new location, with the exception of the enlisted men who are quartered on the third floor of the 20th Bombardment Squadron barracks. These men will remain in their present quarters until the space they are to occupy in Building No. 116 is ready for occupancy. Details of the Squadron personnel will be busy for a few weeks cleaning and painting the new barracks. Plans are in progress for beautifying the grounds in front of the barracks by planting shrubbery and flowers.

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GEN. DRUM INSPECTS 5th COMPOSITE GROUP

Fully recovered from their strenuous exercises with the U.S. Fleet now anchored at their doorstep, the 5th Composite Group, Luke Field, T.H., turned out for the annual inspection of its equipment and personnel by the Department Commander, Major General Hugh A. Drum, on May 12th.

Accompanied by Colonel Wm. W. McCammon, Inspector General's Department; Colonel Thomas Osborne, G-3, Hawaiian Department, and 1st Lieut. Christian A. Clark, aide-de-camp, General Drum arrived at Ford Island at 8:00 a.m. Brigadier General Barton K. Yount, commanding the 18th Composite Wing, and his S-3, Colonel Hume Peabody, also accompanied the inspection party.

Immediately upon landing, General Drum was tendered a 13-gun salute. This was in the nature of an Aloha to the General, since he is leaving the Hawaiian Department in June.

Colonel Millard F. Harmon reported Luke Field in readiness for the inspection as he conducted General Drum and his party to the reviewing stand on the flying field. Closely massed behind him he found the khaki-clad ranks of the personnel of the Group, while behind them in a long line shimmering in the early morning sun were the giant Bombers just recently emerged from their drab camouflage of mimic warfare.

Five officers and 46 enlisted men were called from the ranks and cited in orders read by 1st Lieut. Chester P. Gilger, Group Adjutant, for meritorious duty performed during the year. General Drum then added his verbal commendation. Said he in part:

"The enlisted man normally gets very little credit for exceptional attention to duty. It was with this in mind that I initiated this citation procedure. I congratulate you, all of you."

"Pass in Review," came the command from the troop commander, Major Idwal H. Edwards, and the line of khaki swung into moving ranks. Drums and bugles furnished sprightly music for the marching troops. Platoon after platoon swung past the reviewing stand after the colors.

The ceremony was terminated by an aerial review, the planes passing overhead in close formation as a final Aloha to the Commanding General.

The personnel cited in orders for commendable performance of duty were:

Lieut. Colonel Milton O. Beebe, Chaplains Corps.

Major Phillips Melville, Air Corps.

Second Lieuts. Norman L. Callish, Cady R. Bullock and Fred C. Johnson, Air Reserve.

Master Sergeants Charles F. Gravlin, Harvey H. Hewitt, Ernest Brown, Hal F. Hays, Otto M. Rector.

Technical Sergeants John Dozier, Dan L. Brian, and John A. Vidal.

First Sergeant Everett M. Tilton.

Staff Sergeants Anton Hansen, Lloyd W. Thacker, Peter L. Milliard, Edward S. Dodson, James Robinson, Robert N. Peckham, Jean Nielsen and John J. McCarthy.

Sergeants Stanford D. Peters, Truman F. Taylor, George O. Helle (Sig. Corps), Jesse H. Howard, Eric Wagstaff, Thadeus D. Sadler, Joseph Howard,

Corporals Walter E. Peterson, French C. Duncan, Charles E. Ralph, Edmund J. Borowski, Myles E. Houseberg and Donald C. Worley.

Privates, 1st Class, Ray A. Oliver, Paul H. Loudon, Adolar R. Buntjer, Harold L. Lemmon, Anthony S. Balent, Kenneth N. Smith, August H. Tamm and Michael Theiss.

Privates Frederick C. Back, Norman J. Kingston, Jefferson D. Johnson, Cordell C. Jones, Kenneth M. Connell, Omar F. Naugle and Robert W. Ray.

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SILENCING THE TORQUE STANDS

By the Wright Field Correspondent

Your Power Plant Correspondent sometime ago mentioned the fact that an effort was being made to silence our torque stands. One stand has been completed, and preliminary tests indicate that energy and money expended have been well worth while. At a distance of some thousand yards, ordinary field noises of birds, crickets, wind, rustle of leaves, etc., drown out any torque stand noises. To date tests are not completed, since we need information on the treacherous skip distances that have put grey hairs in the head of the man who answers the letters from the public.

And why all this trouble? Well, it is primarily to enable us to operate our test engines straight through the 24 hours in a day. With perfection, the plan undoubtedly will be extended to our depots which run in our overhauled engines on their test stands.

We hope the money expended will pay for the cost of paper now used to answer complaints registered throughout the United States because propeller noises have disturbed the tranquility of the afternoon siesta at the old maids' home, aggravated the hangover of the town's local playboy, caused the hens to quit laying on Good Friday, or caused Lady Plushbottom's prized Pekingese "Tootsie" to have the jitters.

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Colonel Walter R. Weaver, Air Corps, on duty as Commanding Officer of Langley Field, Va., was promoted to the permanent rank of Colonel, to date from May 7th, 1937.

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NEW AIRPLANES FOR THE ARMY AIR CORPS

Two contracts for new airplanes, involving a total expenditure of $13,024,203.10, were recently entered into by the War Department with aircraft manufacturers for 262 combat type.

On June 2nd, the Hon. Harry H. Woodring, Secretary of War, announced the award of a contract to the North American Aviation, Inc., Inglewood, Calif., for 85 Basic Combat airplanes and the equivalent of ten additional airplanes as spares, at a total cost of $1,372,255. This type of airplane was recommended for procurement by the Chief of the Air Corps some time ago, for the reasons below stated, and this is the first quantity procurement of same.

With the advent of the large all-metal airplane which, although much more efficient, costs considerably more than the earlier types, an urgent need was felt in the Air Corps for an airplane with which such auxiliary training as instrument flying, aerobatics, etc., could be conducted, leaving the tactical combat airplanes free for the performance of purely tactical missions.

In addition, there are, of necessity, a considerable number of Air Corps pilots on duty away from tactical units who must maintain their flying proficiency. The Basic Combat airplane is designed to fill these needs.

Another use to which the Basic Combat airplane may be put is that of observation, it being equipped with all the necessary auxiliary equipment for that purpose. It would therefore form a reserve of observation aircraft in an emergency.

It should be understood that the incorporation of basic combat airplanes into the procurement program of the Air Corps is not with the view to curtailing either the numbers or the activities of the combat airplanes already planned for use by the General Headquarters Air Force. This type will supplement the larger and more expensive types, and since same is equipped with retractable landing gear, flaps, controllable pitch propellers, modern instruments and safety devices, the experience gained by pilots in its use will go far toward familiarizing them with the problems inherent in the handling of larger airplanes.

The North American Basic Combat airplane fills the need of this type of airplane to a very high degree and was selected after competition with other entrants in a competition conducted at the Air Corps Materiel Division, Wright Field, Dayton, Ohio.

The desired characteristics of an airplane of this type are of interest. It should attain a high speed of 190 m.p.h., or more. It should have an endurance of $3\frac{1}{2}$ hours or more, service ceiling of 18,000 feet. It should be capable of operating from small unimproved fields and should be able to cruise at low speed for observation purposes.

The winner of the competition meets the above requirements satisfactorily. It carries a crew of two, two-way radio, all necessary instruments, landing lights, and provisions for mounting an aerial camera. It is a low wing cabin monoplane with tubular steel fabric covered fuselage, metal wings and stabilizers. It has a retractable landing gear, automatic controllable pitch propeller and flaps, and is powered by a Pratt and Whitney single row radial engine of 450 horsepower.

On June 10th, the Secretary of War announced the award to the Douglas Aircraft Company, Inc., of Santa Monica, Calif., of a contract in the sum of $11,651,948.10 covering the purchase for use by the Army Air Corps of 177 two-engine Bombardment airplanes, together with necessary spare parts for same.

This contract is, in money value, the largest one for airplanes ever placed by the Government during a time of peace. The magnitude of the procurement is such that the Government secures a considerable price advantage, so far as the unit cost per airplane is concerned, over that obtainable under the old method of making frequent, but comparatively small, purchases.

The new Bomber contracted for was recently demonstrated to the Government at Wright Field, Dayton, Ohio, and has been found to embody distinct advances in aircraft design and engineering. While capable of carrying a substantially larger useful load than the Bombardment airplanes with which the General Headquarters Air Force is now equipped, its efficiency is not thereby diminished and it attains a high speed in excess of 225 miles per hour. Each airplane is to be equipped with two of the latest type Wright "Cyclone" aeronautical engines.

The acquisition of these Bombardment airplanes by the combat units of the Army Air Corps will necessarily result in a materially strengthened National Air Defense.

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Master Sergeant Mortimer O'Sullivan, of the 64th School Squadron, Kelly Field, Texas, retired on May 31, 1937. He entered the Service on April 30, 1908, and was assigned to the 55th Co., Coast Artillery Corps, Fort Kamehameha, Hawaii. He has ten honorable discharges with the notation, "Character: Excellent."

Master Sergeant O'Sullivan has served in the Cavalry, Quartermaster Corps, and the Air Corps.

Biographies

LIEUT. COLONEL GERALD E. BROWER

Lieut. Colonel Gerald E. Brower, Air Corps, now on duty in the Supply Division, Office of the Chief of the Air Corps, was born at Brooklyn, N.Y., August 25, 1893. He attended the Boys' High School in Brooklyn, N.Y., and after graduating from the College of Engineering, Cornell University, Ithaca, New York, in 1916, he received a commission as a second lieutenant of Field Artillery on December 1st of that year. He was promoted to 1st Lieutenant, January 26,1917; to Captain (temporary) August 5, 1917; to Captain, April 15, 1918; to Major, August 17, 1928, and to Lieut. Colonel (temporary) June 16, 1936.

During the World War, Colonel Brower saw service in the Toul Sector and in the St. Mihiel and Meuse-Argonne offensives. He served with the Field Artillery until October, 1918, and was then detailed to the Air Corps. He was on duty as a student observer at the 2nd Corps Aeronautical School in France until January 30, 1919; was attached to the 20th Company, 4th Regiment Motor Mechanics during the month of February, 1919, and was on duty on the school staff of the 2nd Corps Aeronautical School to May 9, 1919, when he was assigned to the 1st Aero Squadron, Wiessenthurm,Germany, as aerial observer.

Upon his return to the United States, Colonel Brower, on August 29, 1919, was assigned as commanding officer of the 20th Aero Squadron at Ellington Field, Houston, Texas. On September 25, 1919, he was transferred with the 166th Aero Squadron to Kelly Field, Texas. He was Operations Officer of this organization from September 12 to October 13, 1919, and Operations Officer of the 1st Day Bombardment Group from September 30, 1919, until June of the following year.

Returning to the Field Artillery, he served as Commanding Officer of Battery A, 3rd Field Artillery, at Camp Grant, Ill., from July 1 to 16, 1920, when he rejoined the Air Service and began flying training at the Air Service Pilot School at Carlstrom Field, Arcadia, Fla. Upon the completion of his training, November 12, 1920, he was assigned to duty at Langley Field, Va., where until January 1, 1921, he served as Executive Officer of the Field Officers' School, and as Adjutant of this School from November 22, 1920, to August 18, 1921. He also served as Chief, G-1 Section, 1st Provisional Air Brigade, from May 6 to August 18, 1921. Assigned as a student at the Field Officers' School, he graduated therefrom on June 15, 1922. During the summer months of that year he was on duty at the summer training camp at Camp Custer, Mich.

From August 12, 1922, to August 15, 1923, Colonel Brower was a student at the Air Service Engineering School at McCook Field, Dayton, Ohio. Upon his graduation from this school he remained at McCook Field as Chief of the Airplane Maintenance Section of the Engineering Division until June 30, 1926. He also served as President of the Inventions Board. Following duty as a student at the Massachusetts Institute of Technology, Cambridge, Mass., from June 26,1926, to June 9, 1927, and temporary duty at the Boston Airport for several months, he returned to Dayton in September,1927, for duty at the Materiel Division,Wright Field, where he served as Acting Assistant Chief Engineer to November 14, 1927; as Chief of the Special Assignments Unit to September, 1928, and as Chief of the Airplane Branch to March 28, 1930.

After commanding the 1st Pursuit Group at Selfridge Field, Mt. Clemens, Mich., from May 15, 1930, to July 9, 1932, Col. Brower was transferred to duty in the Philippines, assuming command of Clark Field and the 3rd Pursuit Squadron on October 17th. Upon the completion of his tour of duty in the Philippines, he pursued a one-year course of instruction at the Command and General Staff School at Fort Leavenworth, Kansas. His graduation from this School in June, 1936, was followed by his assignment to the Supply Division, Office of the Chief of the Air Corps.

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LIEUT. COLONEL WILLIAM H. CROM

After a lapse of 21 years, Lieut. Colonel William H. Crom, Air Corps, is slated to return soon to the Philippines for a tour of foreign service. He served in the Philippines from June, 1914, to November, 1916, as a lieutenant with the Philippine Constabulary.

Born in Gainesville, Fla., July 31, 1892, Colonel Crom attended the public schools of Florida and in 1914 graduated from the University of Florida with the degrees of Bachelor of Science in Electrical Engineering and in Mechanical Engineering. He was appointed a second lieutenant, U.S. Army, November 27, 1916, assigned to the 13th Infantry, and from December 1, 1916, to February 28, 1917, he was stationed at the Infantry School at Fort William McKinley, P.I. From March 1, 1917, to August 2, 1920, he was on duty with his regiment as company commander and garrison adjutant. He served in the Philippines from December 1, 1916, to August 13, 1918, and from April 18, 1920, to August 23, 1920. From August 14,1918, to April 8, 1920, he was stationed in Siberia, near Vladivostok.

Upon his return to the United States, Colonel Crom was detailed to the Air Service, and after undergoing primary flying training at March Field, Riverside, Calif., from October 12, 1920, to April 9, 1921, he was transferred to the Air Service Observation School at Post Field, Fort Sill, Okla., for advanced training. He received the rating of "Airplane Pilot," effective October 14, 1921. He also took the course of instruction at the School of Fire for Field Artillery, and upon completion of same remained at Fort Sill on duty as an instructor at the Air Service Observation School until June 16, 1922, when he was transferred to the Advanced Flying School at Kelly Field, Texas, and assigned as Senior Instructor of the Observation Department. On August 1, 1923, he assumed command of the 42nd School Squadron, in addition to his other duties. From October 11, 1923, to April 10, 1924, he performed the duties of Director of Observation, Advanced Flying School.

Transferred to Washington, D.C., Col. Crom was on duty as Assistant Chief of the Information Division, Office of the Chief of the Air Corps, to August 6, 1925. From September 1, 1925, to February 1, 1926, he was on duty as a student at the Army Industrial College, and thereafter, until July 28, 1926, he was on duty in the Industrial War Plans Division, Office of the Chief of the Air Corps, as Chief of the Requirements Section and Chief of the Facilities Section.

At Bolling Field, D.C., his next station, Colonel Crom performed at various times the duties of Commanding Officer of the 99th Observation Squadron; Commanding Officer of the 8th Division, Air Corps; Executive Officer and Commanding Officer of the field. On September 23, 1927, he was transferred to the Materiel Division, Wright Field, Dayton, Ohio, for duty in the Industrial War Plans Section. He was appointed Chief of that Section on July 1, 1928.

From September 5, 1931, to June 12, 1932, Colonel Crom was a student at the Air Corps Tactical School at Maxwell Field, Ala., and, following his graduation from this School, he remained at Maxwell Field, commanding the Air Corps Tactical School Detachment, until September 5, 1932, when he was transferred to Washington, D.C., for duty in the Office of the Assistant Secretary of War as Assistant Chief of the Commdities Division, Planning Branch. In August, 1936, he began the one-year course of instruction at the Command and General Staff School, Fort Leavenworth, Kansas, and he is slated to enter upon a tour of foreign service in the Philippines upon his graduation from this School in June, 1937.

GRADUATION AT ADVANCED FLYING SCHOOL

In connection with the graduation of the class from the Advanced Flying School, Kelly Field, Texas, which started training at the Primary Flying School, Randolph Field, Texas, on July 1, 1936, the first event on the program was an aerial review staged at 9:30 a.m. by the graduating students, followed by the graduating exercises at 10:45 a.m., Wednesday, June 9, 1937, in the War Department Theatre at Kelly Field.

Major General James K. Parsons, U.S. Army, Commanding General of the Second Division, Fort Sam Houston, Texas; Brigadier General James E. Chaney, Commanding General of the Air Corps Training Center, and his staff, as well as the faculty of the Primary and Advanced Flying Schools, were among those expected to attend the exercises. The students from Randolph Field were scheduled to be in formation in front of the Post Operations Office to witness the review.

The program called for the delivery of the Invocation and Benediction by Major George J. McMurray, Chaplain of Randolph Field; introductory remarks by General Chaney, and the graduation address by General Parsons.

This is the 29th class to be graduated from the Air Corps Training Center under Plan B. The class reported for advanced training at Kelly Field on February 25th and actually began work on March 1, 1937. Three members of this class, Flying Cadets James B. Baker, Francis J. Black, Jr., and Victor M. Heath, will be held over for training with the next class. All of them lost time from training while absent sick, necessitating their being held over to make up this time.

The graduates are listed on page 14 of this issue of the News Letter.

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NAVIGATION TRAINING AT LANGLEY FIELD

The 2nd Bombardment Group Navigation School, operated by the 21st Reconnaissance Squadron, Langley Field, Va., started the class working on Celestial Navigation on May 6th, using both ground and practical aerial problems in the course. The class now has approximately two-thirds of their work completed. They are looking forward to one or two long flights in order to put into practice the theory learned during their course of instruction.

Captain A.Y. Smith, Air Corps, was relieved from his duties as Group Navigation Officer and Senior Instructor in the School on April 26th to participate in the Pacific Coast Maneuvers with the 49th Bombardment Squadron. First Lieut. John W. Egan, Air Corps, who recently joined the 21st Reconnaissance Squadron, was detailed as Group Navigation Officer and Senior Instructor to replace Captain Smith.

NEW PILOTS FOR THE ARMY AIR CORPS

Of the class of 132 students (15 officers and 117 Flying Cadets) entering the Air Corps Training Center on July 1, 1936, 62 students (10 officers and 52 Flying Cadets) comprising 47% of the original entering class, successfully completed the Primary and Basic courses at the Primary Flying School at Randolph Field, Texas, and the advanced course at the Advanced Flying School at Kelly Field, Texas, and graduated on June 9, 1937.

Three Flying Cadets of this class who, because of illness or other reasons, were unable to complete the course, were held over for the next class at the Advanced Flying School.

An officer from the Mexican Navy, Lieut. Lorenzo Egurrola, and a member of the Philippine Constabulary, Jesus A. Villamor, were additional members of the class, both graduating, the first named specializing in Attack Aviation and the last named in Pursuit Aviation.

The members of the graduating class are listed below, as follows:

AIR CORPS OFFICERS

Lieut. Colonels

Raymond E. O'Neill	San Francisco, Calif.
Laurence F. Stone	Pocatello, Idaho

Majors

Warner B. Gates	Evanston, Ill.
George G. Lundberg	Olean, N.Y.
Walter J. Reed	Scarsdale, N. Y.

Captains

Howard H. Couch	Monrovia, Calif.
James F. Early	Worcester, Mass.
John P. Kirkendall	Dallas, Pa.

OFFICERS OF OTHER BRANCHES

1st Lt. Chas. E. Wheatley, Cav.	Portland, Me.
2nd Lt. Chas. B. Winkle, Inf.	Seaside, Oregon

FLYING CADETS

Allison, John R.	P	Gainesville, Fla.
Aynesworth, Horace D.	A	Alpine, Texas
Baker, Ancil D.	P	Moscow, Idaho
Bastin, Henley V., Jr.	O	Anchorage, Ky.
Bayse, William E.	P	Independence, Mo.
Blakey, George A.	P	San Antonio, Texas
Bradley, Follett, Jr.	A	Langley Field, Va.
Brown, Thomas D.	O	Spokane, Wash.
Butner, Thomas L.	P	Roanoke, Va.
Bywater, Murray A.	A	Salt Lake City, Utah
Carr, George R.	O	Pocatello, Idaho
Chickering, Edwin S.	A	Temple, Texas
Clancy, Charles A.	A	San Diego, Calif.
Cobb, Raymond L.	A	Brownwood, Texas
Countway, Lewis E.	O	Quincy, Mass.
Crowder, Murray W., Jr.	O	Joshua, Texas
Culbertson, Allman T.	A	Dansville, N.Y.
Curtice, Raymond L.	A	Concord, N.H.
Davis, Waymond A.	A	Lubbock, Texas
Fallows, Ronald F.	P	Mason City, Iowa
Fiegel, Leland G.	P	Rochester, Minn.
Freeman, Julien W.	A	Clinton, S.C.
Godman, Henry C.	P	Palo Alto, Calif.
Greening, Charles R.	P	Tacoma, Wash.
Hardeman, Milton L.	P	Athens, Ga.
Hudson, Guy L.	O	Los Angeles, Calif.
Kaufman, Donald H.	P	Los Angeles, Calif.
Kegelman, Charles C.	A	El Reno, Okla.
Kellond, Arthur W.	A	San Antonio, Texas
Lorenz, Richard F.	A	Chicago, Ill.
MacKay, Homer M.	P	Lansing, Mich.
Marshall, John R.	O	Montgomery, Ala.
Means, Howard M.	O	Kane, Pa.
Montgomery, Guilford R.	P	Sidney, Neb.
Moore, Frederick L.	A	Fillmore, Calif.
Morris, Joseph A.	P	Alva, Wyo.
Payne, John H.	A	Austin, Texas
Rau, Harold J.	P	Shavertown, Pa.
Reed, James O.	P	Eugene, Ore.
Robinson, George L.	A	Corona, Calif.
Russell, Barton M.	P	San Diego, Calif.
Sewart, Harold Y.	O	Murfreesboro, Tenn.
Sprague, Wilbur B.	P	Manhasset, N.Y.
Stark, William R.	A	Starkville, Miss.
Stunkard, McClellan F., Jr.	O	Governors Is., N.Y.
Suiter, Theodore A.	A	Spearfish, S.D.
Thomas, Morris E.	O	St. Petersburg, Fla.
Thompson, Frank K.	P	Columbus, Ohio
Tikofski, Adolph E.	O	Walpole, Mass.
Viccellio, Henry	A	Chatham, Va.
Watson, Ansley	P	New York, N.Y.
Wilson, Delmer E.	A	Ephrata, Wash.

Note: All of the officer graduates specialized in Observation Aviation, while the Flying Cadets specialized in the branch of combat aviation as indicated by the letter opposite their names, viz: A-Attack; O-Observation, and P-Pursuit.

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ARMY AIR CORPS DEPOT AT SACRAMENTO

The Hon. Harry H. Woodring, Secretary of War, announced on June 8th that contracts had been let for over half of the work required to complete the new Air Corps Depot at Sacramento, Calif. This Air Corps Depot is being constructed to replace the temporary war time structure, which is now in use by the Army at Rockwell Field, San Diego, Calif. The Sacramento Air Depot will be completed and in operation by December, 1938. Rockwell Field has been turned over to the Navy by Executive Order, and it is necessary for the Army to Evacuate the buildings at an early date, in order that the development of that station by the Navy may proceed.

The runway at the new depot is approximately one mile in length, and the large shop building covers some 17 acres. This depot will be sufficient to provide maintenance facilities for the Air Corps now on the West Coast and also for organizations in overseas territory. As constructed, it is susceptible of considerable expansion in the event that necessary Air Corps organizations on the West Coast are increased.

The completion of this project will materially enhance the National Defense by providing a permanent base in the middle of the Pacific Coast area.

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First Sergeant Otto Steblein, of the 64th School Squadron, Kelly Field, Texas, retired on May 31st. He entered the service September 12, 1899, and was assigned to the 38th Infantry Volunteers, Philippine Dept. He has ten honorable discharges with the notation, "Character: Excellent."

RESERVE COMMISSIONS FOR FLYING CADETS

The following-named Flying Cadets, members of Class No. 25-B, who graduated from the Advanced Flying School, Kelly Field, Texas, on June 17, 1936, and who completed their year of training with an Air Corps tactical unit, have been recommended by the Chief of the Air Corps for commission as second lieutenants in the Air Reserve:

Barksdale Field, Shreveport, La.

Buller, Howard Leavelle	Stanford Univ, Calif.
Cullerton, Edward Francis	Butte, Mont.
Ferguson, James	Whittier, Calif.
Griffith, Willard Dudley	Spokane, Wash.
Osborn, Roy William	Sanborn, N.D.
Whitfield, Harvey H.	Houston, Texas

Brooks Field, San Antonio, Texas

Flolo, Russell LeRoy	Aberdeen, S.D.
Martin, Ray Hamilton	Austin, Texas
Pechuls, John Allison	Pullman, Wash.
Schultz, Herbert Donald, Jr.	Alameda, Calif.
Thomas, Jack	Lubbock, Texas
Zehrung, Paul Wietzel	Dayton, Ohio

March Field, Riverside, Calif.

Converse, Lawrence Floyd	Glendora, Calif.
Hardy, Robert Franklin	Flint, Mich.
Ketcham, Edward William	Madison, S.D.
Mears, Frank Henry, Jr.	Monrovia, Calif.
Nevitt, William Renwick	Houston, Texas
Reynolds, John Norton, Jr.	Los Angeles, Calif.
Miller, William Warren	San Diego, Calif.

Langley Field, Hampton, Va.

Bledsoe, James Lee	Los Angeles, Calif.
Curry, William Lewis	Raleigh, N.C.
Eyre, Lloyd	Los Angeles, Calif.
Jones, James Marion	Temple, Texas
Russell, Clyde Raymond	Chandler, Ariz.
Sluder, Chester Lee	San Antonio, Texas

Hamilton Field, San Rafael, Calif.

Bronson, Howard Franklin, Jr.	Harrisburg, Pa.
Faulkner, Ted Sinclair	Seattle, Wash.
Powers, Robert Becke	Seattle, Wash.
Ridings, Donald Ellis	Moscow, Idaho
Warner, Jo Kyle	Berkeley, Calif.
Sandegren, Thomas Eastman	Tacoma, Wash.

Mitchel Field, L.I., New York

Beardsley, Melville W.	Kansas City, Mo.
Catlin, Ralph W.	Bay City, Mich.
Chapman, Charles T., Jr.	Corpus Christi, Texas
Hampton, Thomas K.	San Marino, Calif.
Osher, Norman C.	Graettinger, Iowa
Peterson, Homer F.	Moscow, Idaho
Rethorst, William	Piedmont, Calif.

Selfridge Field, Mt. Clemens, Mich.

Burke, Kevin	Buffalo, N.Y.
Fausel, Robert Wilton	Louisville, Ky.
Haws, Jesse William	Provo, Utah
Helmick, Paul Franklin	Corvallis, Ore.
McCloskey, Richard Dale	Lancaster, Pa.
Moore, Andrew Dale	Worthington, Minn.
Saehlenou, Hadley Vincent	Hollywood, Calif.

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KELLY FIELD HOST TO RESERVE OFFICERS

Reserve officers attending the National Convention of Reserve Officers Association were given a demonstration of night flying at 8:00 p.m., on Monday, May 23rd. The program was as follows:

8:00- Pursuit Demonstration - 12 P-12's.
8:20 Formation take-off, 8:00 p.m.
Formation over airdrome 8:05 - 8:15.
Landings by elements 8:15 - 8:20.

8:15- Attack Demonstration, 6 A-12's.
8:40 Formation take-off, 8:15.
Formation over airdrome, 8:20-8:25.
Landing of one element in formation, 8:27.
Individual flare landings by three airplanes, 8:27-8:40.

8:40- Bombardment and Observation Demonstration, 9 B-4's and 6 O-25's.
9:25 Formation take-offs, 8:40 - 8:45.
Observation airplane locates target on airdrome at 8:45 and signals with signal flares. Six Observation airplanes then keep target illuminated for eight minutes.
Bombardment flights of 3 airplanes each simulate attack on target.
Individual landings by Observation airplanes, using wing lights only, 9:05 - 9:15.
Formation landings by elements of Bombardment airplanes, 9:15 - 9:25.

A public address system was installed in front of Post Operations Office. A demonstration of radio control of airplanes in the air from the ground was given, and this system was used to explain maneuvers to spectators. An airplane of each type was parked near the Operations Office in the area lighted by floodlights. A demonstration of the use of signal light gun was given.

The following letter of appreciation from Mr. J.H. Lapham, an official of the San Antonio Chapter of the Reserve Officers Association, is quoted.

"May 27, 1937.

Brigadier General J.E. Chaney,
Randolph Field, Texas.

Dear General Chaney:

It is almost needless to tell you that the demonstration which was accorded by the Air Corps Training Center to the visiting members of the Reserve Officers Association was deeply appreciated.

I feel that very few of them had ever witnessed the type of night flying that was exhibited by your Kelly Field students, and I feel sure that the demonstration of training and facilities at Randolph were an eye-opener to all of us.

One thing that impressed me, and I am sure must have likewise impressed everyone else, was the high type of personnel under your command. Seldom have I met a group of officers so kind, courteous and considerate to strangers within their gates.

While the visits made to both Kelly and Randolph were naturally rather short, I am sure that everyone has gone away with a very lasting, definite impression of the efficiency of the Training Center and the keen type of individuals who are turning out our Army pilots.

Many thanks again for your kindness.

Sincerely yours,
J.H. Lapham."

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THE PHILIPPINE ARMY AIR CORPS

On May 1, 1937, the Philippine Army Air Corps completed its first year of operation, its activities being mainly confined to student flying training. First Lieut. W. L. Lee, Air Corps, Chief of the Philippine Army Air Corps, recently submitted a brief report covering the operations of this one-year-old infant, and it discloses some very interesting statistics.

Equipped with only three PT-1 Training planes and one C-1 Transport, the total flying time of these four planes for the year's training was 1869:50 hours (7,797 landings). The C-1 Transport is credited with 200:05 hours and 178 landings; one PT-1 with 590:10 hours and 3,349 landings; another with 573 hours and 2,427 landings, and the third with 506:35 hours and 1,843 landings. There were flying operations on 288 of the 365 days of the year, and of the 77 days when the planes were idle, Old Jupiter Pluvius halted proceedings on eighteen different occasions, one entire day was devoted to maintenance, and Sundays and holidays were responsible for a closed shop on 58 days.

Of the 245 applicants for flying training (47 officers, 7 enlisted men and 191 civilians) who were called for physical examination, a total of 170 responded (46 officers, 7 enlisted men and 116 civilians), and of these 59 qualified, namely, 32 officers and 27 civilians. Of those found physically qualified, 41 actually started flying training, the remaining 18 being held in reserve for classes which will be started in the near future. Before the end of the year the original class of 41 students dwindled to but 13, the lack of flying ability being the cause for the elimination of 24 of the students. One student was eliminated because of physical defects, two resigned and one was appointed a Flying Cadet in the Air Corps who, by the way, graduated from the Air Corps Advanced Flying School, Kelly Field, on June 9th, specializing in Pursuit Aviation.

The 13 students who remained in training throughout the year accumulated a total dual flying time of 631:10 hours; a total solo flying time of 780 hours and a grand total of 1411:10 hours.

During the year's training there was one semi-major crash and one of a minor nature. There were no fatalities or serious injuries, and the worst that could be said in this connection is that one student received a few cuts.

Included in the tabulation of flying time by personnel of the Philippine Army Air Corps are the names of Lieut. Lee with 403 hours, and Lieut. H.A. Parker, with 667:40 hours. It is presumed that these two young Air Corps officers, among their other duties, served in the capacity of flying instructor, although it is not so stated in the report.

If one were to express the opinion that these two Army airmen performed a pretty fine job in their first year of endeavor to place the Philippine Army Air Corps on its feet, there would be a nod of approval from all sides.

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BIG SHIPS COVER LOTS OF TERRITORY

In a routine introductory cruise over the industrial heart of the nation, on May 16th, last, the Langley Field Correspondent reports that four gigantic "flying fortresses," led by Lieut. Colonel Robert Olds, Commanding the 2nd Bombardment Group of the GHQ Air Force, from Langley Field, Va., covered fifteen States in eleven hours.

The flight departed from Langley Field at 6:30 a.m., and flew over Washington, D.C.; Baltimore, Md.; Philadelphia, Pa.; Trenton, N.J.; New York City; Hartford, Conn.; Providence, R.I.; Boston, Mass.; Concord, N.H.; Portland, Maine; Augusta, Maine; Montpelier, Vermont; Albany, Syracuse, Rochester and Buffalo, New York; Erie, Pa.; Cleveland, Ohio; Pittsburgh, Pa.; Richmond, Va., and returned to Langley Field at 5:30 p.m.

The planes were commanded by Lieut. Colonel Olds, Major Meloy, Captain O'Connor and 1st Lieut. Travis. The co-pilots were Major Giles, Captain McReynolds, 1st Lieut. Lauer and 2nd Lieut. Cochrane. The navigators were 1st Lieuts. Miller, Higgins, LeMay and Glantzberg.

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GRADUATIONS FROM RANDOLPH FIELD

The Air Corps Primary Flying School at Randolph Field, Texas, will graduate ninety students on June 18th. These students will start their advanced training at Kelly Field, Texas, the first week in July. Comprising this class is one Air Corps officer (Major Lester T. Miller), two officers from other arms of the service, 37 graduates from the class of 1936 of the U.S. Military Academy, and 50 Flying Cadets.

This class started training at Randolph Field in October, 1936, and actually 170 students started flying. Eleven of these students are being held over until the next class, and there has been but one fatality.

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The GHQ Air Force Maneuvers

(Continued from Page 6).

and March Fields' Air Bases, to provide training for joint work between Pursuit and anti-aircraft, and thoroughly to check up on existing weak spots in the Air Corps. And, quoting General Andrews once more, these tests have shown that every unit involved throughout the entire campaign worked like clockwork - that we are at present undermanned and under-equipped; that additional airdromes are direly needed.

The losses during the maneuvers culminated in four planes, two transports and two Pursuit, but no lives. This is another proof of the high standard maintained by the Air Corps.

Major General George S. Simonds acted as official observer and personal representative of the Secretary of War, with Major General Oscar Westover and Brigadier General Walter Krueger acting as official observers for the War Department. In command of the GHQ exercises was Major General Frank M. Andrews. Official visitors and observers during the exercises were the following:

Colonel H.J. Knerr, Chief of Staff;
Colonel Follette Bradley, Assistant Chief of Staff, GHQ Air Force;
Colonel Herbert A. Dargue, Assistant Commandant, Air Corps Tactical School;
Colonel Jacob E. Fickel, Air Officer of the 9th Corps Area;
Lieut. Colonel Charles T. Phillips, Asst. G-4, War Department;
Major St. Clair Streett, War Plans Division, War Department Gen. Staff;
Major L.P. Hickey, Assistant Chief of Staff, G-1;
Major J.P. Hodges, Assistant Chief of Staff, G-2;
Major C.C. Chauncey, Assistant Chief of Staff, G-3;
Lieut. Colonel J.T. McNarney, Assistant Chief of Staff, G-4;
Lieut. Colonel Edward Montgomery, CWS, Chemical Officer;
Colonel W.G. Kilner, Inspector;
Major W.W. Dick, AGD, Adjutant General;
Major E.C. Whitehead, Asst. Inspector;
Lieut. Colonel R.L. Maxwell, O.D., Ordnance Officer;
Lieut. Colonel C.C. Drake, QMC, Quartermaster;
Lieut. Colonel C.W. Lewis, SC, Signal Officer;
Colonel W.E. Cooper, MC, Surgeon.
Captain Luke Smith, Asst. Executive, Office Chief of the Air Corps, and many others.

March Field was glad to see these officers and hopes to be able to play host again to them sometime in the near future.

It is understood that the exercises were considered a complete success.

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ECHOES FROM THE WEST COAST MANEUVERS

35th Pursuit Squadron: After three weeks of basking under California's sunny skies, the 35th Pursuit desert rats returned to their home range (Langley Field) with saddle warts and hairy ears. As the outer layer of Mojave dust gradually washes away we begin to see, here and there, traces of some pretty good sun tan.

In spite of the tedious hours of sitting, tooling the old PB covered wagons across the continent and back proved to be a highly interesting and educational experience. The ships performed beautifully, and provided little difficulty of maintenance while in the field.

The defense of that portion of the dry lake bed designated as the Los Angeles area turned out to be a tough assignment for the Pursuit. The Bombers poured in from all directions and dribbled their eggs on the target, whether or not they were intercepted and "shot down" by the Pursuit. And as if that wasn't enough,- "Gas! Here comes the damattack again. Phew! That's the real thing this time. The gas masks made poor bed fellows, but were certainly convenient to have within reach.

36th Pursuit Squadron: Early this week our flight returned from the siege at Muroc Dry Lake. Reports on our solitary confinement in the wastelands of sunny California vary greatly, but the daily routine definitely included individual parboiling under a desert sun, unit freezing under an Arctic moon, and passive group submission to lingering attacks of tear gas at all hours of the day and night.

Both the trip out from Langley Field and the trip back were enjoyed by all, and the weather confronted rendered much valuable experience to the newer members of the Squadron.

Hq. and Hq. Squadron, 8th Pursuit Group: The wind-blown, dust-laden, tear-gassed personnel and airplanes of this organization returned to the "fold" (Langley Field) from the GHQ Concentration on Monday, the 24th, after spending three weeks enroute to and from, and engaging in the GHQ Air Force Concentration and Maneuvers. It has been reported that a good time was had by all. As one man expressed it, he "gassed" everyone enjoyed the trip and was one maneuver nearer "M" day. A period of inspection and engine changing following the maneuvers will keep the hangar crew out of mischief for a while.

37th Attack Squadron: At 7:00 a.m., Monday morning, May 3rd, the seven A-17 airplanes comprising the 37th Attack Squadron took off from Langley Field for Barksdale Field, where they were attached to the 13th Attack Squadron to participate in the annual GHQ Maneuvers at Delano, Calif. At 3:00 a.m. Tuesday, the Squadron left Barksdale Field for the West Coast, arriving at Delano at 3:45 that afternoon, after stopping at

Midland, Texas, and Tucson, Arizona, for gas. The well organized camp at Delano was a welcome sight to the combat crews after their tedious 1500-mile trip across the country.

The period from May 5th to 9th was devoted to practice and orientation flights within a 200-mile radius of Delano. On these flights some of the pilots saw for the first time the beautiful valley of San Joaquin and the snow-covered peaks of the Sierra Nevada Mountains.

On May 10th, the GHQ war games started in earnest. The 13th Attack Squadron, to which the 37th was attached, was assigned the chemical missions, which consisted of contaminating the Pursuit airdrome and the anti-aircraft emplacements at Muroc Dry Lake, about 100 miles east of Delano.

After the war games were officially over on Friday afternoon, May 21st, Lieut. Berquist, who played a prominent part in "winning the war" for the 3rd Attack Group, engaged himself in a private and more permanent war by forfeiting his bachelor freedom forever to Miss Alice Porterfield, of Berkeley, Calif. The ceremony was performed by Chaplain Martin, of March Field, in the officers' mess tent at Delano. The bride was attended by Miss Mildred Blake and Mrs. Porterfield.

Leaving Delano on Sunday morning, May 23rd, the 37th Squadron started the long journey home, stopping overnight at El Paso, Texas, and Maxwell Field, Ala., and arriving at Langley Field at 2:00 p.m., May 25th.

2nd Bombardment Group: All airplanes of this Group returned to Langley Field from the West Coast Concentration Exercises with the exception of 2nd Lieut. J.B. Stanley, who had motor trouble at Winslow, Arizona, necessitating his delay at that city to change engines.

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Graduations from A.C. Tactical School

Graduation exercises at the Air Corps Tactical School, Maxwell Field, Ala., were held on June 1st.

Following the invocation, Brigadier General Henry C. Pratt, U.S. Army, the Commandant of the Tactical School, introduced Major General Oscar Westover, Chief of the Air Corps, who delivered an address and presented the certificates. The benediction was said by Chaplain Wm. L. Cooper.

Following is the list of graduates:

Lieut. Colonels

Wm. N. Porter, Chemical Warfare Service
Lloyd N. Keesling, Air Corps
David N.W. Grant, Medical Corps.

Majors

Wm. E. Chambers, Infantry
Tom C. Rivers, Signal Corps
Morril Ross, Field Artillery
John E. Dahlquist, Infantry
Hugh N. Merrick, Coast Artillery Corps
Alden H. Waitt, Chemical Warfare Service

Majors, Air Corps

Clyde V. Finter
Shiras A. Blair
Ray A. Dunn
Harold H. George
Harlan W. Holden
Frank D. Hackett
Ulysses G. Jones
Edward D. Jones
Bob E. Nowland
Bernard T. Castor
James D. Givens
Wm. W. Welsh
Robert T. Zane
Robert V. Ignico
Malcolm S. Lawton
James M. Gillespie
Fred'k M. Hopkins, Jr.
George P. Tourtellot
Orvil A. Anderson
Wallace G. Smith
Paul L. Williams
George W. Polk, Jr.
John W. Monahan
John A. Laird, Jr.
Harold A. Bartron

Captains, Air Corps

David G. Lingle
Charles Backes
Lawrence J. Carr
John F. McBlain
James M. Bevans
Donald F. Fritch
Edmund C. Lynch
Wallace E. Whitson
John R. Hawkins
Kirtley J. Gregg
Alva L. Harvey
Clinton W. Davies
David M. Schlatter
Earle E. Partridge
Joe L. Loutzenheiser
Robert W. Harper
W.R. Wolfinbarger
Joseph Smith
John K. Nissley
Uzal G. Ent
James S. Stowell
Earl W. Barnes
Yantis H. Taylor

Officers, other branches

Capt. Henry L. Kinnison, Jr., Cavalry
Hayne D. Boyden, Marine Corps (Capt)
Capt. William O. Brice, Marine Corps
Capt. Vernon E. Megee, Marine Corps
Lieut. Elton C. Parker, U.S. Navy

1st Lieuts. Air Corps

Fay O. Dice
Bud J. Peaslee
Russell E. Wilson
Frank F. Everest, Jr.
George McCoy, Jr.
Joseph C. Hopkins
Frank H. Robinson
Wm. A.R. Robertson

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PROMOTION OF 2ND LIEUTENANTS

The following-named 2nd Lieutenants of the Air Corps were promoted to 1st Lieutenants, with rank from June 12, 1937:

John B. Cary
Paul C. Ashworth
Curtis D. Sluman
Byron E. Brugge
William S. Stone
George B. Dany
L.S. Moseley, Jr.
Wm.J. Holzapfel, Jr.
Gene H. Tibbets
Paul T. Hanley
Jack E. Shuck
John deP. T. Hills
Wm.M. Canterbury
Jerome E. Blair, 2d
Edward Flanick
William M. Gross
Dale O. Smith
Hudson H. Upham
Frank C. Norvell
Paul Burlingame, Jr.
Wilson H. Neal
Elvin S. Ligon, Jr.
Charles B. Winkle
Herbert M. Baker, Jr.
John M. Hutchison
Arno H. Luehman
Raymond J. Reeves
William H. Wise
Richard A. Legg
Harvey T. Alness
Albert T. Wilson, Jr.
John W. White
Stanley J. Donovan

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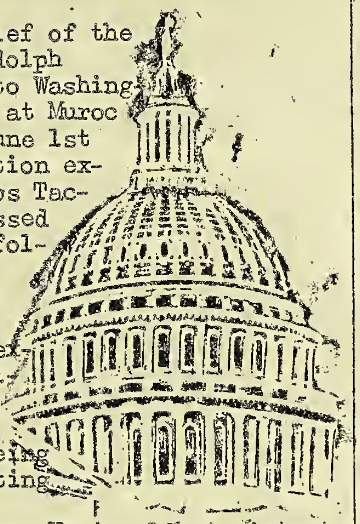
Major Eugen G. Reinartz, Medical Corps, on duty as Flight Surgeon at Chanute Field, Rantoul, Ill., is under orders to proceed about October 20th, next, for duty in Hawaiian Department.

NOTES FROM THE WASHINGTON OFFICE



General Westover, Chief of the Air Corps, visited Randolph Field, Texas, enroute to Washington from the Maneuvers at Muroc Dry Lake, Calif. On June 1st he attended the graduation exercises at the Air Corps Tactical School and addressed the graduating class, following which he made a trip to Milwaukee, Wis.

On June 12th he attended the graduation exercises at the U.S. Military Academy, West Point, N.Y., his son, Charles B. Westover, being a member of the graduating class.

Brigadier General Henry H. Arnold, Assistant Chief of the Air Corps, attended the recent graduation exercises at West Point, where, incidentally, the 30th Reunion of his class was held.

Recent visitors to the Chief's Office were Lieut. Colonel Junius W. Jones, Commanding Officer of Chanute Field, Ill., during the course of a training flight; Major Austin W. Martenstein, from Maxwell Field, Ala.; Major Merrick G. Estabrook, Jr., from Wright Field, while on a navigation flight to Bolling Field; Major Ray A. Dunn, from Maxwell Field, while on leave; Lieut. Colonel Carl Spatz, from Langley Field, during the course of a navigation flight; 1st Lieut. George W. Mundy, from Barksdale Field, La., while on a navigation flight; 1st Lieut. Floyd B. Wood, student at the Massachusetts Institute of Technology, Cambridge, Mass., while on a navigation flight; Brigadier General Henry C. Pratt and 1st Lieut. Dwight B. Schannep from Maxwell Field, for conference; 1st Lieuts. Robert D. Johnston and George W. Hansen, the former from March Field and the latter from Maxwell Field.

Colonel William C. McChord returned June 10th from leave of absence.

Captain Francis H. Vanderwerker, of the Judge Advocate General's Department, stationed at Wright Field, Ohio, arrived June 7th for temporary duty.

Lieut. Colonel Michael F. Davis returned June 2nd from leave of absence, as did Captain Donald F. Stace the following day.

Major William B. Souza returned June 7th from a navigation flight to Mitchel Field, N.Y.

Major Karl S. Axtater departed June 7th on a navigation flight to Salt Lake City, Utah.

Lieut. Colonel William E. Lynd returned from a navigation flight to the West Coast on June 5th and left on the 7th on leave of absence prior to reporting for duty as a student at the Naval War College, Newport, R.I.

Captain James B. Jordan returned May 30th from a navigation flight to Augusta, Maine.

Captain James W. Spry returned May 31st from a technical inspection trip.

Major James A. Mollison departed June 11th on a navigation flight to Maxwell Field, Ala.

Major Edward M. Powers, from Wright Field, Ohio, reported on June 1st for temporary duty in the Chief's Office.

Captain Evers Abbey returned from five days' leave of absence, during the course of which he visited the U.S. Military Academy, West Point, N.Y., where his son just concluded his plebe year with a high standing.

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WAR DEPARTMENT ORDERS

Changes of Station

To Washington, D.C.: 1st Lieut. Robert M. Losey, for duty in Office of the Chief of the Air Corps, upon completion of present course of instruction at California Institute of Technology, Pasadena, Calif.

To Wright Field, Ohio: Major John P. Richter from San Antonio Air Depot, Duncan Field, Texas; Captain Edward H. White, upon completion of present course of instruction at Harvard School of Business Administration, Cambridge, Mass.

To San Antonio, Texas: Captain Nathan F. Twining, upon completion of present course of instruction at Command and General Staff School, Fort Leavenworth, Kansas, for duty as Air Corps Technical Supervisor. Previous orders in his case revoked.

To Panama Canal Department: Major Leonidas Koontz, from duty as Executive Officer, Primary Flying School, Randolph Field, Texas.

To Hawaiian Department: 1st Lieut. John J. Keough, from Chanute Field, Ill.

To Randolph Field, Texas: 1st Lieut. Thomas C. Morgan, from Brooks Field, Texas.

To Chanute Field, Ill.: 1st Lieut. James McK. Thompson, from Fort Riley, Kansas, for duty as student in 1937-1938 Communications Course at Air Corps Technical School.

Orders Revoked

Assignment of 1st Lieut. Hilbert F. Muenter, Randolph Field, Texas, to duty as student at California Institute of Technology, Pasadena, Calif.

Extended Active Duty for Reserve Officers

2nd Lieut. Leonard Erickson, San Francisco, Calif., to Fort Lewis, Wash., to June 14,1940.

2nd Lieut. Irvine Alfred Rendle, Rawlins, Wyo., to March Field, Calif., to June 14,1940.

2nd Lieut. John Franklin Biggerstaff, Wabash, Ind., to Langley Field, Va., to June 15, 1939.

2nd Lieut. Lawrence Karl Welch, Belleville, Ill., to Post Field, Okla., to May 4, 1940.

2nd Lieut. Richard Powers Schumacher, Los Angeles, now on duty in Hawaii, duty extended to June 30, 1939.

Transfers

1st Lieut. Charles F. Wheatley, Jr., Cavalry, to the Air Corps, April 3, 1937, and to proceed from Advanced Flying School, Kelly Field, to Hawaiian Department, for duty with Air Corps.

2nd Lieut. Charles B. Winkle, Infantry, to the Air Corps, April 10, 1937, and to proceed from Advanced Flying School, Kelly Field, to Panama Canal Department for duty with Air Corps.

2nd Lieut. John G. Benner, Air Corps, from Selfridge Field, Mich., to the Field Artillery, April 21, 1937, and to station at Fort Knox, Ky., with 68th Field Artillery (Mechanized).

PROGRESS ON CONSTRUCTION OF HICKAM FIELD

An article by Lieut. J.H. Veal, Quartermaster Corps, in a recent issue of the Honolulu ADVERTISER, states that approximately one year has elapsed since construction activities were started at Hickam Field, during which the village of Watertown and Puuloa camp have been salvaged, the cane fields destroyed, and a great many of the algaroba trees have been cut and burned. The area as a whole bears little resemblance to its former self.

Contracts amounting to $2,412,829 have been let, covering the following important projects: clearing of site, making core borings, installation of 71,000 feet of water line, two and one-half miles of railroad, 15 miles of roads, four double hangars, dock and boat house, magazines, 267,000 square yards, or 55 acres of paved landing mat, eight miles of sewer line, wing operation building, gate house and fence, and a radio building. In addition to these projects, the Army Signal Corps is installing a complete telephone system at a cost of approximately $100,000.

Proposals have been asked for the installation of an electric distribution system, the construction of additional railroad and roads, and the sealing of artesian wells, and contracts on these proposals will be let within the next 30 days.

The nursery, which was developed to furnish the material for landscaping, has established approximately 200,000 trees and shrubs, of which about 1,750 have been planted along the streets and in parks.

To date $4,300,000 has been allotted for this project, and it is expected that approximately $3,250,000 more will be available on July 1st of this year.

With this money it is planned to complete that portion of the field which will accommodate an Air Corps Group, which is one-half of the field's ultimate capacity.

In order to accommodate a Group, the following projects, in addition to those already mentioned, must be completed: a gas distribution system, paved aprons and additional landing mat, sewage disposal plant, night lighting system, gasoline storage system, five barracks buildings, quartermaster warehouse, six field officers' quarters, 33 company officers' quarters, 42 noncommissioned officers' quarters, additional grading and the top surface on all roads. Plans and specifications for many of these projects have already been prepared and will be advertised as soon as the money is available.

It is difficult to estimate the benefits a community derives from a large construction project of this nature. However, an idea of the large quantity of materials needed, most of which will be purchased through local dealers, may be obtained from the following estimate:

Concrete, 200,000 cubic yards; roads, 20 miles; sidewalks, 30 miles; roofing, sufficient to cover 25 city blocks; pipe line for water, 55,000 feet; underground electric cable, 90 wire miles; lumber, 8,000,000 feet; sewer line, 75,800 feet.

Several hundred local men have had steady employment for the past year, and at the present time there are about 400 directly employed, with a monthly payroll of over $31,000. At the peak of construction, it is expected that some 2,000 men will be directly employed, and the monthly payroll will be close to $200,000.

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FLYING TRAINING FOR FILIPINO OFFICERS

Four young Filipino officers recently left on the U.S. Army Transport GRANT for the United States, where they will report at Randolph Field, Texas, for flying training beginning with the July class, viz: Lieuts. Eustacio D. Orobia, Isidro J. Paredes, Andres O. Cruz and Ramon M. Zosa.

These officers have had considerable flying training in Manila, and it is the belief of the U.S. Army Air Corps officers on duty with the Philippine Army Air Corps, who have instructed these boys, that they have a very good chance of completing the course at Randolph Field. All four have over 100 hours of flying time, all of which is on the PT-1's.

This makes a total of six Philippine Army Air Corps officers now on duty in the States. One graduated from Kelly Field last October in Observation Aviation and is now at Chanute Field pursuing the course in Communications at the Air Corps Technical School. He will graduate this June and return to Manila to assist in the development of the Philippine Army Air Corps. Another one is now at Kelly Field, taking Pursuit Aviation, and will graduate in June, following which he will be sent to Selfridge Field, Mich., for two months' temporary duty, and then go to Chanute Field for a course in Aerial Photography.

Authority has been obtained from the U.S. War Department to send four student fliers to Randolph Field in March, 1938, and four in March, 1939. Authority has also been obtained to send eight enlisted men to Chanute Field this fall; eight in the fall of 1938 and eight in the fall of 1939. Eight enlisted men have already been graduated from Chanute Field and are now on duty with the Philippine Army Air Corps.

If all men sent to the States successfully complete the courses, the Philippine Army Air Corps will have 32 enlisted graduates from Chanute Field and 14 officer graduates from the flying schools. The Chief of the Philippine Army Air Corps, 1st Lieut. W.L. Lee, Air Corps, expresses the hope that authority may be obtained to send all the flying school graduates to Chanute Field to pursue courses thereat after their graduation from Kelly Field.

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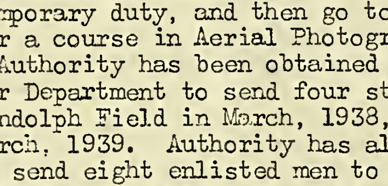
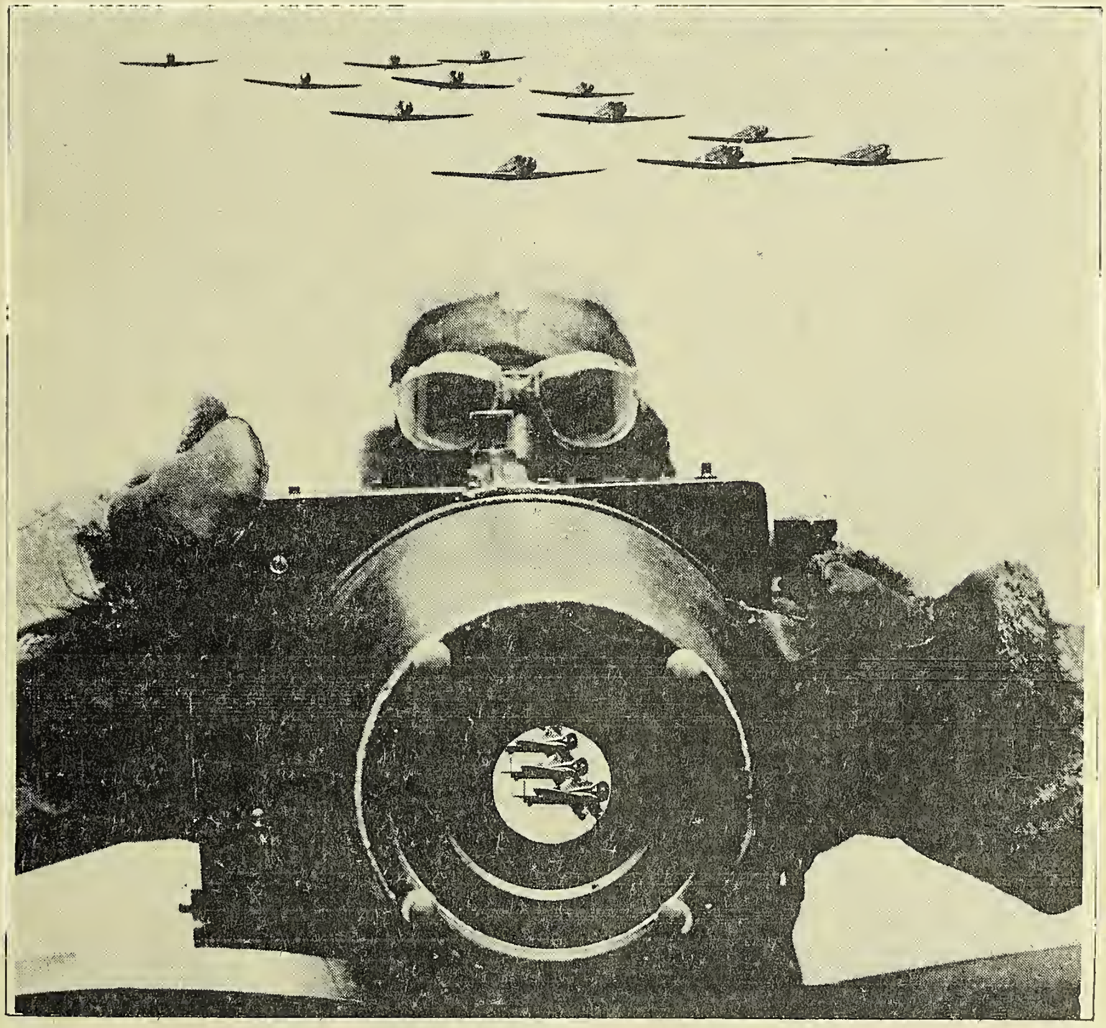


We should like to hear from Wheeler, Patterson and Pope Fields, and more often from Mitchel, March, France, Albrook, Clark, Nichols, Selfridge, Scott, and from National Guard Aviation activities, as well as Air Corps Reserve activities.

AIR CORPS
NEWS LETTER



ISSUED BY
THE OFFICE OF THE CHIEF OF THE AIR CORPS
WAR DEPARTMENT
WASHINGTON

VOL. XX JULY 1, 1937 NO. 13

VOL. XX AIR CORPS NEWS LETTER NO. 13.

Information Division
Air Corps

July 1, 1937

Munitions Building
Washington, D.C.

The chief purpose of this publication is to distribute information on aeronautics to the flying personnel in the Regular Army, Reserve Corps, National Guard, and others connected with aviation.

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TRANSFER OF ARMY METEOROLOGICAL SERVICE TO AIR CORPS

METEOROLOGICAL service for the Army, which has heretofore been the responsibility of the Signal Corps, was on July 1st transferred to the branches of the Army utilizing this service. These include the Air Corps, the Field Artillery, the Coast Artillery Corps, the Ordnance Department and the Chemical Warfare Service.

The Air Corps, which is by far the most interested user of meteorological data, plans to establish an Air Corps School of Meteorology for enlisted forecasters at Patterson Field, Fairfield, Ohio, at which two courses of instruction, each of five months' duration, will be conducted each year. The number of students accepted for each course will not exceed thirty-five. An enlisted complement of not to exceed ten men will be assigned as assistants at school headquarters.

In the establishing of this organization, the present School of Meteorology, located at Fort Monmouth, New Jersey, under Signal Corps jurisdiction, will be discontinued in July, and the school property and personnel transferred to Patterson Field, where it is expected classes will be started not later than September 1st.

Since the Air Corps has become the prime user of the meteorological service, the transfer of this responsibility is a logical step. The development, procurement, storage and supply of meteorological equipment remains a function of the Signal Corps.

In view of this transfer, it is desired to develop at Patterson and Wright Fields meteorological stations which will be models of modern operation. In line with these plans, the number of enlisted meteorologists assigned to Patterson Field will be increased from 10 to 15, and those at Wright Field from 2 to 5.

Captain Don McNeal, Signal Corps, at present in charge of the Meteorological School at Fort Monmouth, will assume like duties with the Patterson Field School.

Captain Benjamin Stern, Signal Corps, who recently received orders transferring him to Maxwell Field, will be replaced by an Air Corps officer who will be in charge of meteorological activities at the two fields.

Various assignments will bring the additional men to be enrolled at the two fields to a total of approximately 55.

Classes will be conducted in rooms and laboratories on the ground floor of the present headquarters building at Patterson Field. For the present no additional buildings for schools or barracks are contemplated.

The Field Artillery will organize meteorological units at the following posts: Fort Hoyle, Maryland; Fort Sam Houston, Texas; Fort Lewis, Washington; Fort Sill, Oklahoma; Fort Sheridan, Ill.; Schofield Barracks, Territory of Hawaii; Fort Riley, Kansas, and Fort Bragg, N.C. These units will furnish necessary meteorological data to Field Artillery organizations located within their service areas.

The Coast Artillery will continue to operate meteorological units which are now active and will, in addition, organize units at each Coast Artillery harbor defense and at stations of anti-aircraft regiments.

The Ordnance Department will establish one meteorological unit at Aberdeen Proving Ground, and the Chemical Warfare Service, one unit at Edgewood Arsenal, both stations in Maryland.

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INDUSTRIAL COLLEGE STUDENTS GRADUATE

A total of 58 officers graduated on June 22nd from the 1936-1937 class of the Army Industrial College, Washington, D.C., the exercises being held at 10:00 a.m., in the auditorium of the Public Health Service Building.

The graduation exercises consisted of a short introductory speech by the Director, Colonel Harry B. Jordan, Ordnance Department. The principal address of the day was delivered by Admiral William D. Leahy, Chief of Naval Operations, and the diplomas were presented by Major General Stanley D. Embick, Deputy Chief of Staff, War Department.

Among the 58 graduates were 9 officers each from the Air Corps, Quartermaster Corps and Ordnance Department; 4 from the Corps of Engineers; 3 each from the

Infantry and Coast Artillery Corps, 2 each from the Signal Corps, Cavalry, Field Artillery, Finance Department and Medical Corps; one each from the Judge-Advocate General's Department and the Chemical Warfare Service; 7 from the U.S. Navy, and 2 from the U.S. Marine Corps.

Air Corps officers who graduated were Lieut. Colonel Harrison W. Flickinger, Majors Alonzo M. Drake, Alfred J. Lyon, Richard H. Magee, Russell L. Maughan, John I. Moore, Max F. Schneider, Myron R. Wood and Captain Edmund C. Langmead.

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MORE TROPHIES FOR LIEUT. DENSFORD

Lieut. Charles F. Densford, Air Corps, stationed at Kelly Field, Texas, climaxed a successful year of pistol competition by winning the San Antonio Mid-Summer Championship on June 13th, winning two first places, two seconds and two thirds. Lieut. Densford wound up the season with a collection of thirteen trophies and about a hundred medals which are now on display at the Kelly Field Officers' Mess. The trophies must start revolving again when the Texas State Championship Matches are fired at Laredo, July 17th and 18th.

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RADIO MAINTENANCE MEN BEWARE!

Elsewhere in this issue of the News Letter is the obituary of Technical Sergeant Archie L. Ferguson, Air Corps, who met instant death when he came in contact with the high voltage leads of a radio transmitter.

Sergeant Ferguson was a very valuable noncommissioned officer, highly experienced in the maintenance and operation of radio equipment. He left a vacancy in the ranks of enlisted radio specialists which will be very difficult, indeed, to fill. His untimely death is greatly deplored, but the manner in which he lost his life should be a lesson and a warning to other personnel engaged in similar work.

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COMMISSIONS FOR FLYING CADETS

The following-named Flying Cadets of the Air Corps, who graduated from the Advanced Flying School on October 7, 1936, and who since that time were on active duty under their cadet status with Air Corps Tactical organizations at various fields, were commissioned second lieutenants in the Air Reserve on June 10, 1937, and placed on extended active duty at the stations indicated.

BOMBARDMENT PILOTS

Hamilton Field, Calif.:	
Anderson, George R.	Worcester, Mass.
Kent, Billy W.	Braddyville, Iowa
Leber, Harry P., Jr.	Philadelphia, Pa.
Ogden, Alban B., Jr.	Des Moines, Iowa
March Field, Calif.:	
Anderson, James W., Jr.	Kansas City, Mo.
Boyd, Robert	Asheville, N.C.
Childre, Cecil H.	Westaco, Texas
Couch, Alexander P.	El Centro, Calif.
Ferris, John M.	Detroit, Mich.
Gray, Howard W.	St. Paul, Minn.
Kennedy, William J.	Oklahoma City, Okla.
Kilgore, John R.	Nashville, Tenn.
McIntyre, Patrick W.	Chicago, Ill.
[illegible]ney, George [illegible]	Greenville, Mich.
Schmitt, Arthur W., Jr.	Madison, N.J.
Mitchel Field, N.Y.:	
Nelson, Charles K., Jr.	Hammonton, N.J.

ATTACK PILOTS

Barksdale Field, La.:	
Averill, James C.	Brattleboro, Vt.
Kunze, Royce G.	Detroit, Oregon
Ohlke, Harold W.	Kansas City, Mo.
Pharr, Marion N.	Gainesville, Ga.
Scott, Churchill L., Jr.	Brownsville, Texas
Todd, Jack F.	Visalia, Calif.
Wangeman, Herbert O.	Moorpark, Calif.
March Field, Calif.:	
Adkison, Bourne	Compton, Calif.
Coffield, Michael J.	Los Angeles, Calif.
Funk, Ben I.	Denver, Colo.

OBSERVATION PILOTS

Fort Knox, Ky.	
Huish, Frederick G.	Portland, Oregon
Langley Field, Va.	
Barrett, Henry G.	Little Rock, Ark.
Bradshaw, John O.	Highland, Ind.
Mitchel Field, N.Y.	
Anderson, Arthur R.	Crafton, Pa.
Scott Field, Ill.	
Orth, Robert C.	Los Angeles, Calif.
Thompson, Milton E.	Portland, Oregon

PURSUIT PILOTS

Barksdale Field, La.	
Gardner, Raymond H., Jr.	Albian, Mich.
Keith, Troy	Little Rock, Ark.
Learned, Park R., Jr.	St. Paul, Minn.
Rohrbough, Leonard M.	Tacoma, Wash.
Stetson, Loring F., Jr.	Lilliwaup, Wash.

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BARKSDALE PURSUITERS BECOME FLYING INSTRUCTORS

Orders were recently received by eight officers of the 20th Pursuit Group, Barksdale Field, Shreveport, La., to leave immediately for Randolph Field, Texas, for duty as flying instructors, namely, 2nd Lieuts. Bordelon, Kleine and Scott, of the 79th Pursuit Squadron; Eades, Edwinson and Shepard, of the 55th Pursuit Squadron, and Wilson and Wood of the 77th Pursuit Squadron.

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Captain Guy Kirksey, Air Corps, has been relieved from duty at Hamilton Field, Calif., and assigned to station at Fort Bliss, El Paso, Texas, for duty as Commanding Officer of Biggs Field.

TURNOVER OF PERSONNEL IN PANAMA

During the past four months there has been a considerable turnover of personnel of the Air Corps in the Panama Canal Department. Starting in February, each transport has been the exodus of a large group of officers who completed their two years' tour of duty in Panama. The Transport REPUBLIC, sailing from Panama for San Francisco on May 28th, carried away only one Air Corps officer from Panama and marked the finish of the general exodus. During the period of turnover, Albrook Field lost 25 officers, while France Field saw ten off for the States, thus leaving at the present time only a mere handful of old timers who have been in the Canal Zone over six months.

Incidentally, there has also been a general influx of new officers until at the present time a total of 26 new officers arrived in the last four months and, should the last six months be included, an additional twenty newcomers could be listed.

"This turnover in personnel has necessarily caused considerable changes of command," says the News Letter Correspondent, "but under the able guidance of Brigadier General George H. Brett, the 19th Composite Wing is sailing serenely along, manned by a new crew being steadied by the sprinkling of old timers. The officer personnel is now practically fixed for the next two years, and while it was difficult to bid the old gang good bye the newcomers have been welcomed with open arms."

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PHOTOGRAPHS OF CONCHAS DAM

First Lieut. Charles F. Densford, Air Corps, pilot, accompanied by Staff Sergeant Herman L. Chestnutt, photographer, recently made another trip to Conchas Dam, New Mexico, upon the urgent request of the District Engineer at that locality, because of unusual flood conditions.

After leaving Kelly Field, Lieut. Densford was forced to fly by instruments for about an hour before clear weather was encountered. With a stop at Midland, Texas, for refueling, the airmen arrived at the new engineer town at about 5:00 p.m. A half hour later the damage to the half-completed works was photographically recorded.

During the next two days aerial surveys were made of the flooded regions from the headwaters of the Canadian River near Raton Pass downstream to a point about 30 miles east of Amarillo.

Returning to Kelly Field, the photographic team flew down the Pecos River from Santa Rosa, New Mexico, to Carlsbad, photographing flood conditions along the way. The new Almogorda Dam, a few miles upstream from Fort Sumner, was not yet completed, but appeared to be holding up satisfactorily under the record influx of water from the flooded river valleys. Lake Millet at Roswell and Lake Avalon at Carlsbad both were full, but damage to the surrounding territory appeared slight.

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A PROMOTION AND A RETIREMENT

Master Sergeant Charles Budoff, Air Corps, stationed at Langley Field, Va., was appointed a Warrant Officer, U.S. Army, effective July 1, 1937.

A native of Tuskhy, Russia, Sergeant Budoff, who, at the time of his enlistment, lived in Jersey City, N.J., entered the military service on July 22, 1911, and served with the Coast Artillery Corps until December 9, 1919, holding the grade of Radio Sergeant in his last two enlistments. The remainder of his service has been with the Air Corps, and during a considerable part of this time he was stationed at Langley Field. He served a tour of duty in Panama, and in January, 1936, graduated from the Air Corps Technical School, Chanute Field, Rantoul, Ill., as Technical Clerk. He was promoted to Staff Sergeant on December 1, 1920; to Technical Sergeant, April 15, 1922, and to Master Sergeant, September 10, 1924. The newly appointed Warrant Officer is a radio specialist.

Master Sergeant William F. Hohurst, a member of the 2nd Balloon Company, Fort Bragg, N.C., was placed on the retired list, effective June 30, 1937, after 30 years' service. He was born in Brooklyn, N.Y., October 20, 1875, and at the time of his original enlistment in the Corps of Engineers, February 10, 1902, lived in Monrovia, Calif. He reenlisted February 16, 1905, in the Signal Corps, and the remainder of his service in the Army , following the organization of the Aviation Section of the Signal Corps, has been connected with aviation. His duties were mostly associated with the Lighter-than-Air Branch of the Air Corps, and he saw service at Ross Field, Arcadia, Fla.; Lakehurst, N.J.; Langley Field, Va.; Barksdale Field, La.; France Field, Panama, and Fort Bragg, N.C. His appointment as Master Sergeant dates from September 24, 1932.

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Major Albert C. Foulk, Air Corps, has been relieved from duty at March Field, Riverside, Calif., and transferred to the Air Corps Training Center, with assignment to Kelly Field, Texas.

NOTHING TO DO UNTIL TOMORROW

One of the foremost cartoonists of the country who, when he was in the land of the living, caused millions of newspaper readers momentarily to forget their troubles and to indulge in many a hearty laugh over his comical caricatures and the witty sallies that went with them, at one time ran a lengthy series of cartoons depicting various characters engaged in drudgerous occupations who were always in a happy frame of mind.

These happy individuals were depicted reciting to an interested bystander a long list of chores which fell to their lot and which kept them busy all day and far into the night. Then the bystander would exclaim:

"Gee, you're a happy guy!"

"Yep," would come the reply, "nothing to do until tomorrow."

This series of cartoons came to mind upon noting an item sent in by the Maxwell Field News Letter Correspondent, touching on the activities of the Headquarters and Headquarters Squadron of the Air Corps Tactical School.

After making mention of the fact that the Squadron Commander, Major E.E. Hildreth, had departed on a leave of absence, the Correspondent goes on to say that 1st Lieut. Edward J. Hale, Air Corps, assumed command of the squadron, in addition to his other duties, which are: Squadron Mess Officer, Squadron Supply Officer, Squadron Gas Officer, Squadron Athletic Officer and, in addition to the above duties, he is also Secretary at the Officers' Club, Post Ordnance Officer, Commanding Officer of the Ordnance Detachment, Post Recruiting Officer and Post Education and Recreation Officer.

"It may also be stated," continues our Correspondent, "that he performs his regular tour of O.D. and flying of the weather ship frequently. Other than the above duties he spends all of his leisure time in making preparations for his scheduled departure from this station for a period of leave, upon the expiration of which he complies with War Department Orders in reporting to Chanute Field for a course of instruction thereat."

No mention is made by the News Letter Correspondent of Lieut. Hale's frame of mind these days.

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DEFINITION OF AN AERONAUTICAL ENGINEER

One who passes as an exacting expert on the strength of being able to turn out, with prolific fortitude, strings of incomprehensible formulae calculated with micrometric precision from extremely vague assumptions which are based on debatable figures acquired from inconclusive and quite incomplete experiments carried out with instruments of problematic accuracy by persons of doubtful reliability and of rather dubious mentality with the particular anticipation of disconcerting and annoying a group of hopelessly chimerical fanatics described altogether too frequently as airplane designers.

- Contributed.

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POSSIBILITY OF A NEW ACROBATIC TEAM

According to the News Letter Correspondent from Maxwell Field, Ala., one who has had his ears to the ground predicts that an excellent acrobatic team will emerge from the Tactical School personnel and attend the National Air Races in September.

Speaking of an acrobatic team reminds one of the old invincibles, Maxwell Field's own - the "Three Men on a Flying Trapeze." Major Claire L.Chennault, leader of that famous team, which for several years thrilled spectators at aviation meets with its spectacular acrobatic maneuvers in close formation, left Maxwell Field for station at Barksdale Field, La., and was recently ordered to proceed to his home to await retirement. His two wingmen are in China, where we hear they are doing splendidly with their positions. Sergeants "Jo" MacDonald and "Luke" Williamson left many friends at Maxwell Field, as did Major Chennault, and they are constantly being remembered in the well known hangar gossip.

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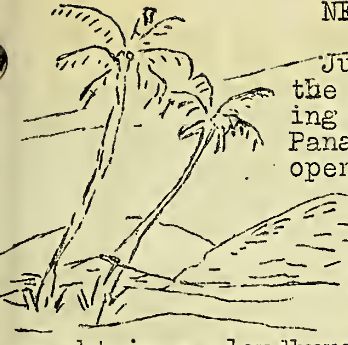
PURCHASE OF NEW AIRPLANE ENGINES

Hon. Harry H. Woodring, Secretary of War, announced on June 24th the award to the Wright Aeronautical Corporation, of Patterson, N.J., of a contract for 531 Wright "Cyclone" engines, Model R-1820-45 and with spare parts, totaling the sum of $5,315,310.00. These engines are for installation in the Douglas B-18A Bombardment planes for which a contract was recently awarded to the Douglas Aircraft Company, as mentioned in the previous issue of the News Letter.

The Wright "Cyclone" is a 9-cylinder air-cooled single-row radial engine, and is the result of ten years of development work involving an expenditure of several million dollars. It is one of the most powerful single-row radial engines in the world. It is likewise one of the lowest weight per horsepower engines, producing one horse power for every 1.08 pounds.

Including the present order, the United States Army Air Corps has more than 1600 of these engines under order or installed in standard equipment, including the 4-engine Boeing "Flying Fortress."

NEW LANDING FIELD PAYS IMMEDIATE DIVIDEND



Just four days after the new emergency landing field near Gamboa, Panama Canal Zone, was opened, it fully justified the outlay of $900. incident to its construction when Lieut. Donicht, in a P-12 Pursuit plane, who was caught in a cloudburst between Albrook and France Fields, made the first emergency landing there. He discovered that both of the airdromes on the Atlantic and Pacific ends of the Canal were closed and zero zero.

In 1913, the rock and dirt from Culebra Cut was removed from between Gold and Contractors Hills and was carried by rail and dumped as a fill about a mile west of Gamboa. This fill was directly on the Panama Canal and is exactly half way between Albrook and France Field. In the twenty-four years that have passed since the fill was deposited at Gamboa, the gigantic rocks taken from the cut have settled and, with the exception of lateral ridges running the length of the fill, it has become more or less level. For many years now, since the Army has constructed airdromes at the ends of the Canal, it has seemed important that the 35-mile run from France to Albrook Field should be safeguarded with an emergency field somewhere along the Canal.

Recently, due to the cooperation of the Governor of the Canal Zone and the Panama Canal Department, especially that of Major William D. Styer, Assistant Engineer of Maintenance for The Panama Canal, this fill has been converted into an emergency landing field that promises to be a great factor in the promotion of safer flying over the jungle that lies between the Atlantic and the Pacific.

It seems that this fill would have been leveled for a landing field long ago but for the fact that a former Canal Zone employee estimated that to construct a field at that site would involve an expenditure of about $20,000. This figure was out of the question from available funds. However, one 14-ton "Bulldozer" with a three-ton blade moved approximately 27,000 cubic feet of earth and stone per day for nine days, and early in May the first airplane landed at Gamboa.

Of special interest during the grading was the ease with which this heavy piece of machinery cut through the jungle, even uprooting trees approaching a foot in diameter, and moving and crushing rocks that weighed well over a ton. In the years which have passed, this fill had become a sanctuary for snakes and iguanas. In one morning the "Bulldozer" ran up the world's record of 17 coral snakes and two bushmasters (largest venomous species of snake in tropical countries of the Western Hemisphere). Numerous articles of interest were found in the fill, such as large sections of the old French dredging tools and a 36-foot length of locomotive rail from France. Disappointment rested with the workmen, for even though the material was taken from "Gold" Hill, no gold was even suggested as the heavy "gumbo" mud was shoved aside.

Strange as it seems, the last tree to be removed from the field was practically in the center of the runway. This small tree was permitted to stand until two young birds in a nest in the tree had flown away. The birds were safe, had they known it, but the two old ones didn't seem to trust the "Bulldozer" very much as it chugged away as close as ten feet from the tree.

Now at Gamboa, plainly marked, the field stands out clearly, with a fifty-foot white circle in the center and white and black markers along the runway every two hundred feet. It is a two-way field, one built into the prevailing wind. It runs east and west. Its length is 2200 feet and the width about 200 feet, the windsock being on the Canal near the center of the fill.

This field brings the number of maintained landing fields in Panama to forty-one.

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WAR COLLEGE STUDENTS VISIT LANGLEY FIELD

The students of the Army War College visited the 2nd Bombardment Group, GHQ Air Force, Langley Field, Va., on June 15th during their annual tour to the Tidewater area. After an inspection of the installation of 100-lb., 300-lb., 600-lb., 1100-lb. and 2,000-lb. demolition bombs in the Y1B-17 type airplanes and a short talk by the Group Commander, the visiting officers witnessed an outstanding bombing demonstration on Plum Tree Island.

In addition to the bombing demonstration by the 2nd Bombardment Group, the organizations of the 8th Pursuit Group (33rd, 35th and 36th Pursuit and 37th Attack Squadrons) staged an aerial gunnery demonstration. Comments heard from various sources indicate that the demonstration was quite successful.

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The fifth class of the Navigation School of the 2nd Bombardment Group, GHQ Air Force, has completed the required instructions and are now preparing the YOA-5 Amphibian airplane for a graduation flight.

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SCHOOL FACILITIES NEAR SITE OF SACRAMENTO AIR DEPOT

THE Constructing Quartermaster of the new Air Corps Air Depot now in process of construction near Sacramento, Calif., recently forwarded a communication received by him from the Clerk of the Rio Linda Union School District, Rio Linda, Calif., which should prove of interest to Air Corps personnel, and which reads as follows:

"In view of the fact that the new Army Air Depot is practically all in the Rio Linda Union School District we, the directors, wish to submit to you certain facts regarding our school which, we hope, may be of interest to the department.

The Rio Linda Union School is situated in the village of Rio Linda, about three miles from the Air Depot. It is considered by the State Department of Education to be one of the best in the county and in many respects ranks higher than any of the Sacramento City Schools. It is a modern building of tile and stucco construction, ten rooms with complete shop for manual training and auditorium. It has a very strong music department and our children are taught any instrument they might wish to play, with strong emphasis on the piano.

We have an orchestra and band of such ranking as one could hope to find in a grade school. The school has a large playground and has recently acquired a complete city block of ground for more playground. All play is completely supervised. Our school is one of the cleanest in the county. The boys have been doing some very fine work in the manual training shop and the girls have been receiving some excellent instructions in sewing and hand work. We feel that we have a very fine staff of teachers, and the work in all departments has been of such outstanding nature that the county supervisors of schools have sent teachers from other schools to us for the study of our system.

We maintain a complete bus system, owned and operated by our school. Our bus drivers are yearly inspected by the State and are compelled to pass three examinations each year. The moral element is stressed very much by the State. Our busses are examined and inspected each month by the State and are required to be in first class condition. In the five years we have operated our own busses, the examination and inspection has each month shown that the busses rated 100%.

Each child has a designated station where it must each day enter the bus, and it must leave the bus at the same station each day. No child is permitted to leave the bus at any other station without a written permit from the parent. No child is allowed to leave the school grounds during the day without a written permit from the parent. The child is in the care of the school from the moment it enters the bus in the morning until it leaves the bus in the evening. This makes for safety far greater than any city school can provide.

Each bus has a complete timetable and operates on a strict time card. In the five years of operation, no child has received as much as a scratch on any of our busses. The first aid kits found in each bus have never been even opened except for inspection. Our busses travel country roads (paved roads) which make for added safety, since they are not compelled to travel in congested traffic areas.

Our school is prepared to give to the Air Depot as good a service as it has maintained for the last years. Children will be picked up at a designated station at the gates or on the grounds as may seem best. If there should be a complete load of 50 children on the ground, an express bus will be operated.

We feel that the department may like to know these facts so we submit them to you with the added information that our board wishes to cooperate with the department in every way. Even if our school is not a city school, it maintains a high standard - as high as any city school, with the added advantage that our school is in a quiet section away from the noise and distraction of the city.

The laws of the State of California regarding school busses is very exacting and severe regarding inspection, drivers, safety and insurance."

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MORE Y1B-17's FOR 2ND BOMBARDMENT GROUP

Personnel from the three squadrons of the 2nd Bombardment Group, Langley Field, Va., were recently dispatched to Seattle, Wash., to take delivery for each of these organizations of a new Y1B-17 Boeing Bombardment plane.

The 20th Bombardment Squadron's ferrying crew comprised Major Vincent J. Meloy, 1st Lieuts. Frederick E. Glantzberg, Ford J. Lauer, Tech. Sgt. Adam L. Wheeler, Staff Sgt. Henry West and Pvt. 1st Class John W. Yankowsky.

The ferrying crew for the 49th Bombardment Squadron were 1st Lieut. Robert F. Travis, pilot; Captain Archibald Y. Smith, navigator; 2nd Lieut. Carlos J. Cochrane, Air Res., co-pilot; Staff Sgt. Troy V. Martin, chief mechanic; Staff Sgt. Henry P. Hansen, asst. mechanic, and Pvt. 1st Class Russell E. Junior, radio operator.

The personnel ordered to Seattle to

(Continued on Page 7).

BRONZE BUSTS OF WRIGHT BROTHERS

June 15th was marked at Wright Field by the placing of bronze busts of Orville and Wilbur Wright in the rotunda of the Army Aeronautical Museum. These highly prized possessions, made possible to the Museum by the Treasury Relief Art Project, are the work of the sculptor, Seth Velsey, who created the plaster cast of Wilbur Wright from photographs supplied by Orville Wright, and that of Orville Wright from personal studies. Mr. Orville Wright aided the sculptor in obtaining the excellent likeness of Wilbur Wright, who died in 1912, by offering suggestions while the work was in progress.

Casting of the bronzes was accomplished at the Antioch Bronze Foundry by Professor Amos Mazzolini, of Antioch College, an outstanding authority in such work. The result is a pair of bronzes of beauty and dignity which will represent for all time the likeness of these two great men.

The busts are mounted on walnut pedestals, 60 inches tall and 16 inches square, without carving, except for the names, which were executed by the sculptor. The wood is rubbed to a smooth dull finish.

While the project was conceived before the completion of the new Army Aeronautical Museum in 1935, work on the sculptures was not started until 1936, when Seth Velsey received the commission. It was a task that offered instant appeal to his imagination. The results of his efforts have been judged successful on many sides, but the most valued approval was that or Orville Wright himself. Likewise it was a great privilege for the artist in his creations to have suggestions and advice from the same source.

Seth Velsey was born in Logansport, Indiana, in 1903. He studied art and architecture at the John Harris Art Institute, Indianapolis, Indiana; the University of Illinois and the Art Institute of Chicago. He was also a pupil of Aldin Polasek. He worked for four years in the studio of Laredo Taft, and was a teacher at the Dayton Art Institute from 1930 to 1934. First prize awards received were the Mrs. Keith Spalding prize, Woman's Club of South Bend, Indiana, and Hoosier Salon, Chicago.

The rotunda of the Army Aeronautical Museum where the busts will have their permanent home offers in color combination and architectural design a fitting and dignified surrounding for such honored company. Walls are of dark oak veneer, with doors and frames of aluminum. A dome is centered above, extending in height the full two stories of the building. Lighting fixtures are of aluminum with frosted glass. The silver tones of doors and lighting fixtures and brown of walls are softened by ceiling motifs blended in grays, cream, and tans. The building was opened in 1935.

The Army Aeronautical Museum, as well as the sculpture project, are under the direct supervision of Brigadier General A.W. Robins, Chief of the Materiel Division, Army Air Corps.

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BIG BOYS IN 23RD BOMBARDMENT SQUADRON

"Men grow large in the Air Corps," says the Correspondent of the 23rd Bombardment Squadron, Luke Field, T.H., and he then goes on to say: "Youngsters who quest the Hawaiian Rainbows, as they fly through the blue skies of the Paradise of the Pacific, stretch to high altitudes even when they have their feet on the ground. A survey of the enlisted personnel of the 23rd Squadron, commanded by Major H.W. Beaton, shows an actual strength of 110 men, who average 5 feet, $8\frac{3}{4}$ inches in height. The First Sergeant, Lloyd N. Johnson, hits exactly the average height and tips the scales at 190 pounds. The tallest man in the organization is Private Martin A. Shaw, Jr., who stands 6 feet, 4 inches. The smallest soldier is Private John C. Ney, who is an even 5 feet, 3 inches.

Thirty-five out of the 48 States of the Union are represented in the birthplaces of these 110 men. Pennsylvania heads the list as the greatest contributor of strength, with 14. Thirty-five of the airmen are southerners who hail from south of the Mason-Dixon line. Three of the Staff Sergeants have their place of birth in foreign lands. Staff Sergeant Domeric Dennis registers Italy as his birthplace; Staff Sergeant Benjamin Hoffman points to Poland as the land of his nativity, and Staff Sergeant Ernest Sommer had Switzerland as his native land. Privates 1st Class Walter Eckel and Edmund Taesch were born in Germany.

But it is in athletic prowess that the 23rd Bombardment Squadron rules supreme in the 5th Composite Group. It swept aside all opposition this year to win the Mills-Atterbury Trophy, which confers upon it the athletic supremacy in the Group. Incidentally, this was the fourth winning of this trophy by the Squadron out of seven chances.

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Ferrying new Planes (Continued from P.6).

ferry back the 96th Bomb. Squadron's third Y1B-17 were Major Jasper K. McDuffie, 1st Lieuts. William C. Bentley, Paul G. Miller, Tech. Sergeant John A. Mauro, Staff Sergeant Dwight M. Capps and Sergeant Frank B. Connor.

Biographies

LIEUT. COLONEL OLIVER P. ECHOLS

Lieut. Colonel Oliver P. Echols, Air Corps, now on duty at the Air Corps Materiel Division, Wright Field, Dayton, Ohio, as Chief of the Engineering Section, was born March 4, 1891, at Charlottesville, Va. He attended the Virginia Polytechnic Institute (1908-10) where he studied civil engineering, and then entered the University of Virginia, where he took the academic course for two years and a law course for one year.

Commissioned a second lieutenant in the Regular Army from civil life, December 4, 1916, he was assigned to the Field Artillery. After three months of duty at the Service School at Fort Leavenworth, Kansas, he served with the 7th Field Artillery as Battery Executive Officer, Battery Commander, and then performed battalion staff duty.

Arriving in France with his regiment, August 13, 1917, he was sent to Camp Le Valdahon and later to the First Corps Aerial Observers School at Amanty, at both of which Schools he completed courses in aerial observation and balloon observation. He was then assigned to the 258 French Aero Squadron at the front for duty as aerial observer. Three months later he was assigned to the 1st American Aero Squadron on the front, remaining with that organization until August 8, 1918.

Colonel Echols was then appointed Group Operations Officer, 1st Observation Group, and he performed this duty until October 9, 1918, when he assumed command of the 1st Observation Group. On October 26, 1918, he was appointed Chief of Air Service, 1st Army Corps, A.E.F., in which capacity he served until April, 1919, when he returned to the United States.

In May, 1919, Colonel Echols assumed command of Godman Field, Camp Knox, Ky., and he served in this capacity until July 19, 1919, when he was assigned to duty as Operations Officer in the Office of the Department Air Service Officer, Southern Department, Fort Sam Houston, Texas. In August, 1920, he returned to Godman Field as Commanding Officer, serving as such until December 7, 1920, when he resumed his former duty as Operations Officer in the Office of the Air Officer, 8th Corps Area. While stationed at Fort Sam Houston, he availed himself of the opportunity to undergo flying training at Kelly Field, Texas.

The regulations requiring that he graduate from a regular pilot school to qualify for a pilot rating, Colonel Echols, on March 28, 1921, reported for duty as a student at the Primary Flying School at Carlstrom Field, Arcadia, Fla., where he completed the course of instruction in July, 1921, following which he completed training in Bombardment Aviation at the Advanced Flying School at Kelly Field, Texas, January 13, 1922.

Assigned to duty in the Office of the Chief of Air Service, Washington, D.C., Colonel Echols was on duty in the Training and War Plans Division until June 15, 1924, when he was placed on duty with the War Department General Staff (G-3) Training Branch. In January, 1926, he was assigned as student at the Army Industrial College, Washington, D.C., and upon the completion of the course at that school in June, 1926, he continued his duties as a student, this time at the Air Corps Engineering School at McCook Field, later Wright Field, Dayton, Ohio. Upon his graduation from the Engineering School, he remained on duty at Wright Firld as Chief of the Equipment Branch, Experimental Engineering Section, until July 16, 1929, when he was assigned as Assistant Chief of the Procurement Section, Materiel Division. He became Chief of that Section in December, 1929.

In September, 1931, Colonel Echols was transferred to the Air Corps Tactical School, Maxwell Field, Ala., for duty as a student and, following his graduation therefrom, he pursued a two-year course at the Command and General Staff School, Fort Leavenworth, Kansas, graduating June 15, 1934. He then returned to Wright Field for duty as Chief of the Engineering Section.

Colonel Echols was promoted to 1st Lieutenant, May 15, 1917; to Captain, April 19, 1919; to Major, November 2, 1928, and to Lieut. Colonel (temp.) March 2, 1935. He held the temporary rank of Major, Field Artillery, from April 15, 1919, to March 1, 1920, and was transferred to the Air Service, July 1, 1920. He holds the flying ratings of "Airplane Pilot" and "Airplane Observer."

In recognition of his service as Operations Officer of the 1st Aero Squadron on the Marne in July, 1918, he was recommended for the Distinguished Service Medal, it being stated that he was responsible in great measure for the success of that unit in the second battle of the Marne. His outstanding service as Operations Officer of the 1st Observation Group during the St. Mihiel and Argonne-Meuse operations was also mentioned in the citation for this decoration.

LIEUT. COLONEL ROBERT C. CANDEE

Lieut. Colonel Robert C. Candee, Air

Corps, now under orders for duty in the Hawaiian Department, was born at Hinsdale, Ill., June 4, 1892. He graduated from Cornell University with an A.B. degree in 1915. During the summer of 1914 he attended the military training camp at Burlington, Vermont, and the one at Plattsburg, N.Y., in the summer of the following year. He was commissioned a second lieutenant of Cavalry, U.S. Army, November 30, 1916, and was on duty with the First Divisional Class at Fort Leavenworth, Kansas, from January 1 to April 1, 1917.

While serving a tour of duty in the Philippines, Colonel Candee was Aide-de-Camp to the Governor-General of the Philippines. From September 10, 1920, to February, 1921, he was on duty with the 3rd Pursuit Squadron at Clark Field, P.I., as student officer, studying aerial observation. Returning to the United States in January, 1922, he was assigned in March of that year as a student at the Air Service Primary Flying School at Carlstrom Field, Arcadia, Fla., which in July of that year was transferred to Brooks Field, San Antonio, Texas. On May 26, 1923, he was transferred to the Advanced Flying School, Kelly Field, Texas, where he completed the course in Bombardment Aviation, December 21, 1923. He was rated "Airplane Pilot," effective January 18, 1924. After several months of detached service, studying Bombardment subjects at Langley Field, Va., McCook Field, Dayton, Ohio, and Washington, D.C., he was assigned to station at Kelly Field, where he served as Director and Senior Instructor of Bombardment training, Advanced Flying School, until September 15, 1925, and Adjutant of the 10th School Group until May 28, 1926. Thereafter he was on duty as Adjutant of the Advanced Flying School until July 13, 1926, and Assistant Executive of this School until September 25, 1926.

Transferred to Langley Field, Va., for duty as student at the Air Corps Tactical School, Colonel Candee, upon graduation, June 15, 1927, and service as commanding officer of an R.O.T.C. Summer Camp at that station, reported August 26th at Fort Leavenworth, Kansas, for duty as student at the Command and General Staff School, from which he graduated June 15, 1928. He then returned to Langley Field for duty as instructor at the Air Corps Tactical School, which in July, 1931, was transferred to Maxwell Field, Ala.

Ordered to duty in the Panama Canal Department, Colonel Candee arrived at Albrook Field, Canal Zone, July 15, 1932, and was assigned as Executive Officer of that Field. He also served as Air Officer of the Panama Canal Department in addition to his other duties from August 9, 1932, to September 3, 1933. On December 1, 1932, he was assigned as Executive of the 16th Pursuit Group at Albrook Field. On several occasions he was in temporary command of that field and of the 16th Pursuit Group.

Completing his tour of duty in Panama in August, 1935, Colonel Candee reported for duty as a student at the Army War College, Washington, D.C., and graduated therefrom June 30, 1936. He was then assigned as student at the Naval War College, Newport, R.I., from which he graduated in May, 1937. From November, 1934, until August, 1935, he was on duty in the Office of the Chief of the Air Corps, Washington, D.C., being assigned to the Plans Division to July 10, 1935, and thereafter to the Training and Operations Division.

Colonel Candee was promoted to 1st Lieutenant, November 30, 1916; to Captain, January 11, 1919; to Major, August 26, 1928, and to Lieut. Colonel (temp.) June 16, 1936.

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OVERHAULING OIL DILUTION ENGINES

The first engines used for extensive periods of oil dilution are now beginning to make their appearance on the overhaul line at Air Depots. As expected, some minor indications of lead bromide corrosion are evident, but substantially the engines are quite satisfactory. Until such time as material specifications can alter certain metallic parts susceptible to action of the lead bromides, parts will have to be replaced, "but it is thought," says the Wright Field Correspondent, "the advantages of oil dilution far outweigh any defects or wear indicated on overhaul engines to date. Of further encouragement is the fact that our basic gasolines are improving, which call for less lead to be added and, in turn, less trouble from corrosion both in active use or storage."

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COL. MILLER TO ASSUME COMMAND OF SAAD

Under Special Orders of the War Department, recently issued, Colonel John H. Howard, at present Commanding Officer of the San Antonio Air Depot, Duncan Field, Texas, is relieved from that assignment and duty, effective on or about July 1, 1937, and is then assigned to duty with the Air Corps, Headquarters Seventh Corps Area, Omaha, Nebraska. On or about July 1, 1937, Lieut. Colonel Henry J.F. Miller, Air Corps, at present Commanding Officer of Brooks Field, San Antonio, Texas, is to assume command of the San Antonio Air Depot.

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Mrs. M.E. Morris, 85-year-old grandmother, was present at Kelly Field recently to witness the graduation of her grandson, Cadet Joseph A. Morris, from the Advanced Flying School. She made a 2,000-mile journey especially for that purpose.

FRENCH AIRMAN VISITS KELLY FIELD

CAPTAIN Georges Fayet, of the French Air Corps, visited the Advanced Flying School, Kelly Field, Texas, on June 19th. A graduate of Saint Cyr, class of 1923, and of the French Air Corps Training School, class of 1925, Captain Fayet's service includes four years as an instructor in Observation Aviation at the French Advanced Air Training School. At present he is a staff officer with the French Air Corps, serving in Algeria, North Africa.

Captain Fayet came to the United States in May, 1937, as a liaison officer in connection with the proposed New York to Paris Air Race. When this race failed to materialize, he was given a nine months' assignment as Military Attache with the French Embassy in Washington.

The French officer's visit to Kelly Field was for the purpose of studying our methods of training, both on the ground and in the air. Having served as an Observation instructor in France, he was most interested in our Observation Section. He states that the main difference in the French and American methods is that the French teach aerial gunnery and bombing in connection with their course, while we do not. Other Observation subjects, such as Photography, Infantry Liaison, Artillery Adjustment, Radio and Reconnaissance are common to both schools, and methods of instruction are practically identical. However, much greater emphasis is placed on instrument and radio beacon flying at Kelly Field than at the French school.

Captain Fayet was greatly interested in the new miniature range rapidly being completed at Kelly Field. Miniature range work is used by the French in their instruction, but not to as great an extent as at Kelly Field. The French equipment is similar to the old Kelly Field range, familiar to all graduates of the Advanced Flying School.

From Kelly Field Captain Fayet left for Maxwell Field, Ala., to continue his inspection.

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NEW OBSERVATION MANUAL

A new Observation Manual is being written for use at the Advanced Flying School by Captain O.P. Weyland, Chief Instructor of the Observation Section, who is the author of the text previously used at the School. The new text brings Observation instruction up to date. The task will be completed within the next 30 days. Photographs and sketches are being prepared for the Manual by the 22nd Photo Section, Kelly Field, Texas.

NO MORE CADET BLUES AT AIR CORPS FIELDS

The information conveyed by the above heading pertains to the blue uniform of the Flying Cadets on extended active duty at Air Corps fields and not to their morale.

According to the Langley Field Correspondent, the streets of Shreveport, La.; the Virginia Peninsula (Langley Field); New York, Detroit; Los Angeles, San Francisco, and other cities and towns contiguous to air bases of the General Headquarters Air Force will be minus the picturesque blue uniforms of the Army's Flying Cadets after the first of July.

Girl friends of the young pilots will have the thrill of being escorted places by second lieutenants of the Air Corps Reserve after that date. It's this way:

For over three years, graduates of the Air Corps Training Center at San Antonio, Texas, have been required to retain the natty blues issued to them at the Air Corps Primary Flying School when they first became fledglings in the nation's sky army. Lack of appropriations prevented them from assuming the "shavetail" rank of former years.

But Congress, heeding the persistent recommendations of Major General Frank M. Andrews, the commander of the GHQ Air Force, remedied that this year by providing funds for the next fiscal year, which commences July 1, 1937, Henceforth, only students at the Air Corps Primary Flying School, Randolph Field, and the Air Corps Advanced Flying School at Kelly Field, will wear the cadet ensemble.

Ninety-seven flying cadets will be affected by the Appropriation Act, it was recently disclosed at GHQ Air Force Headquarters. Nineteen are at Langley Field, Va.; 5 at Mitchel Field, L.I., New York; 16 at Selfridge Field, Mt. Clemens, Mich.; 24 at March Field, Riverside, Calif.; 10 at Hamilton Field, San Rafael, Calif., and 23 at Barksdale Field, Shreveport, La.

Hereafter, graduates of the Air Corps Training Center will be commissioned in the Air Corps Reserve directly upon graduation. In accordance with other recent legislation, they will serve three years on active duty at GHQ Air Force posts or on foreign service as second lieutenants. Their active duty tour may be extended for a further period of two years in the grade of 1st Lieutenant.

The News Letter Correspondent states in conclusion that the addition of these young officers to the commissioned strength of the General Headquarters Air Force will relieve the older officers of some of the administrative details incidental to their work and that the change is a welcome one.

THE NEW CLASS AT THE PRIMARY FLYING SCHOOL

Of the 164 students selected by the Chief of the Air Corps for appointment as Flying Cadets and who will begin training at the Primary Flying School at Randolph Field, Texas, on July 1, 1937, 13 are Reserve officers from various branches of the military service, 6 are enlisted men of the Air Corps and 6 from other arms of the service, and the remaining 139 are candidates from civil life.

These students are scheduled to undergo a year of intensive flying training at the Air Corps Training Center, comprising primary and basic courses of four months each at Randolph Field and a four months' advanced course at the Advanced Flying School at Kelly Field, Texas. Those who successfully complete the one year's course will be rated Airplane Pilots, commissioned second lieutenants in the Air Reserve and placed on extended active duty with Air Corps tactical organizations.

With 24 native sons entering the July class at Randolph Field, Texas is far in the lead in the matter of the largest State representation in this class, followed by California and Oklahoma with ten students each, South Carolina with eight and Massachusetts with seven. Austin, Texas, and Lawrence, Kansas, lead the cities represented, each with three students.

The list of new students is as follows:

Reserve Officers (2nd Lieutenants)

Donlon, James D. (F.A.)	Antioch, Calif.
Abbott, Alvin S. (Inf.)	Suffield, Conn.
Fulcher, Richard P. (Inf.)	Lexington, Ky.
Dobrinic, Matthew P. (Inf.)	Taylor Springs, Ill.
Lydon, Leonard C. (Engrs.)	Dexter, Iowa
Miller, Edwin B. (Inf.)	Viola, Kans.
Reed, Elliott H. (Engrs.)	Perry Point, Md.
Trimble, Henry J., Jr. (Inf.)	Oklahoma City, Okla.
Cole, Woodrow Wilson (Inf.)	Tulsa, Okla.
McConnell, Ihatt A. (Inf.)	Okmulgee, Okla.
Epperly, Howell C. (F.A.)	Philadelphia, Pa.
Stockdale, Charles H. (Engrs.)	Morgantown, W. Va.
Ross, William A. (Inf.)	Madison, Wis.

Civilian Candidates

Speer, William Arthur	Birmingham, Ala.
Wallace, David Woodson	Phenix City, Ala.
Rush, Richard Francis	Tucson, Ariz.
Van Sicklen, Frederick, Jr.	Alameda, Calif.
Kurtz, Frank Allen	Hollywood, Calif.
James, Frank B.	Huntington Park, Calif.
Hebert, Alvin Edward	Los Angeles, Calif.
Bowen, John Edward	San Francisco, Calif.
Enemark, William Andrew	San Francisco, Calif.
Nordwick, Norman Henry	Stockton, Calif.
Pollard, John Winston	Wasco, Calif.
Polifka, Karl Lewis	Watsonville, Calif.
Barksen, Wallace Irving	Denver, Colo.
Capasso, Alexander	Hamden, Conn.
Arnold, Richard, Jr.	Hartford, Conn.
Neuenhahn, William Charles	Washington, D.C.
Perkins, Charles Lewis	Atlanta, Ga.
Burkett, George Wilson, Jr.	Dry Branch, Ga.
Taylor, Broadus Beene	Ringgold, Ga.
Chilton, Robert Creed	Boise, Idaho
Krummes, Robert Mathias	Moscow, Idaho
Nash, Bertram Isaac	Weston, Idaho
Maloney, Robert Grace	Chicago, Ill.
Omiecinski, Tad R.	Chicago, Ill.
Rademacher, Walter Frank	Harristown, Ill.
Wells, Cecil Leon	Edwardsville, Ill.
LaBow, Ralph Guy	Lincoln, Ill.
Miller, Samuel Hudson	Decker, Ind.
Stewart, Robert Reed	West Lafayette, Ind.
Stintzi, Vernon L.	Chester, Iowa
Dunham, Earl Herbert	Jefferson, Iowa
Sandvold, Winston Conrad	Moorhead, Iowa
Lewis, David L.	Waterloo, Iowa
Dresbach, Harold M.	Hutchinson, Kans.
Cummings, William J., Jr.	Lawrence, Kans.
Ramage, Edwin Miles	Lawrence, Kans.
Scoggins, James Edwin, Jr.	Lawrence, Kans.
Shannon, Gerald David	Parsons, Kans.
Brenner, Francis Eastham	Russell, Kans.
Bowie, William Allen	Baton Rouge, La.
Champagne, Wilbur Anthony	Lafayette, La.
Loe, Roy Murray	Pineville, La.
Brewster, Wendell Swanton	Dexter, Me.
Stoddard, James Merrill	Eastport, Me.
Billings, Herman	Portland, Me.
Hutton, Junius Oscar	Chevy Chase, Md.
Kahn, Theodore C.	Boston, Mass.
Higbee, Charles Ellsworth	Hyde Park, Mass.
Chalmers, Douglas	Newtonville, Mass.
White, Thomas Andrew	Norwood, Mass.
Overing, Glendon Philip	Orange, Mass.
Adams, Louis Charles, Jr.	West Newton, Mass.
Philbrick, Richard W.	Winchester, Mass.
Pemberton, Howard LaVerne	Kalamazoo, Mich.
MacNaughton, Franklin H.	Mulliken, Mich.
Swenson, Raymond T.	Chicago City, Minn.
Walseth, Marvin Ernest	Frazee, Minn.
Christopher, Garfield L.	Pine City, Minn.
Elam, William S.	Greenville, Miss.
Townsend, William A.	Kosciusko, Miss.
Ott, William Dunnica	Osyka, Miss.
Brister, Kinch Exum, Jr.	Yazoo City, Miss.
Stewart, William Frederick	Kansas City, Mo.
Martin, Charles	Webster Grove, Mo.
Brown, Robert J.	Brady, Nebr.
Brennecke, Paul Thaddeus	York, Nebr.
Carr, John Kermit	Fallon, Nevada
Hampton, Edgar Wade	Margate, N.J.
Marshall, Richard Skip	Newark, N.J.
Wenrick, Stanley T.	Newark, N.J.
Dixon, Rod	Brooklyn, N.Y.
Kelly, Thomas A.	Hornell, N.Y.
Topalian, James Lamcolm	Kew Gardens, L.I., N.Y.
Alberi, Americo	Mt. Vernon, N.Y.
Tate, Nicholas L.	Yonkers, N.Y.
Griffin, James Henry	Asheville, N.C.
Shanklin, Edward Henry	Rocky Mount, N.C.
Ward, Donald Thomas	Fargo, N.D.
Van Atta, Dwight Cameron	Richwood, Ohio
Bridges, John DeGraff	Oklahoma City, Okla
Bartlett, Frank Marion	Purcell, Okla.
Putnam, Walter B.	Tulsa, Okla.
Jones, Herman Powell	Tuskegee, Okla.
Shipley, Howard J.	Tuttle, Okla.
Sebastian, Charles A.	Wewoka, Okla.
McCauley, Verron	Dufur, Ore.
Hammers, Harold Eugene	Hood River, Ore.
Taylor, William Elton	The Dalles, Ore.
Ambrose, Joseph Richard	Danville, Pa.
Wagner, Boyd D.	Johnstown, Pa.

Darby, Richard	Beaufort, S.C.
Arnold, Patrick Raymond	Clemson, S.C.
English, William Robins	Columbia, S.C.
Bacot, Henry Parrott	Lamar, S.C.
Kitchens, John Glenn	Laurens, S.C.
Drafts, Lucius Griffith	Leesville, S.C.
Moore, Joseph Harold	Spartanburg, S.C.
Hastings, Henry Stack	Wellford, S.C.
Cole, Vitalis I.	Aberdeen, S.D.
Hall, Melville H.C.	Centerville, S.D.
Hormell, Earl Lynn	Knoxville, Tenn.
Madre, John Douglas	Memphis, Tenn.
Hall, Haywood	Murfreesboro, Tenn.
Taylor, Ozburn Early	Nashville, Tenn.
Broadbent, Harry Hartwell	Austin, Texas
Petri, Emil Hubert	Austin, Texas
Starkey, Lynn Blakeley	Austin, Texas
Glasgow, Mark Othello	Bloomington, Texas
Griffin, Linwood, Jr.	Dallas, Texas
Stagner, Jack	Dallas, Texas
Skiles, Duane H.	Denton, Texas
Crimmins, Fred T., Jr.	Fort Worth, Texas
Brown, Ralph O.	Hico, Texas
Keating, Ernest Wilbur	Houston, Texas
Putnam, Claude Edwin, Jr.	Jacksboro, Texas
Hamrick, William Ambrose	Pampa, Texas
Baker, Clyde G.	San Antonio, Texas
Dunn, Frank Lowry	San Antonio, Texas
Howard, Frank G.	San Marcos, Texas
Smith, Coalie F.	San Marcos, Texas
Randolph, John Peyton	Schertz, Texas
Wagner, Hale Richard	Temple, Texas
Chick, Lewis William, Jr.	Twin Sisters, Texas
Brown, Joel R., Jr.	Tyler, Texas
Hogan, Eddie Walsh	Waco, Texas
Herder, Ralph F.	Yoakum, Texas
Droz, Paul Christian	Salt Lake City, Utah
Lorenz, John Thomas	Salt Lake City, Utah
Gowell, Gerald E.	Charlottesville, Va.
King, Cline R.	Christiansburg, Va.
Hardisty, Dale	Olympia, Wash.
James, Loren S.	Olympia, Wash.
McDowell, Rex W.	Rockford, Wash.
Gay, Warren T.	Seattle, Wash.
Cross, Maxwell David	Morgantown, W.Va.
Bushman, Frederick W.	Gilman, Wis.
Lunde, Oswald W.	Kewaunee, Wis.
Pridemore, Fred William	Milwaukee, Wis.

King, Francis T.	Honolulu, T.H.

Enlisted Men (Privates) Air Corps

Tindall, Porter W.	Collins, Ark.
8th Air Base Squadron, Brooks Field, Texas	
Vaughan, Paul George	Terre Haute, Ind.
3rd Air Base Sqdn., Selfridge Field, Mich.	
McNeese, George M.	Bassfield, Miss.
80th Service Squadron, Brooks Field, Texas	
Hoevet, Dean C.	Fairfield, Nebr.
Hq. and Hq. Squadron, Chanute Field, Ill.	
White, Alex Cameron	Muskogee, Okla.
53d School Squadron, Randolph Field, Texas	
Strickland, John W.	Texarkana, Texas
Base Hq. & 8th Air Base Sqdn. Brooks Field.	

Enlisted Men (Privates) Other Arms of Service

Hopwood, Homer Ward (QMC)	Sheffield, Ala.
Fort McClellan, Ala.	
Sakowski, Peter C.	Herkimer, N.Y.
Medical Department, Bolling Field, D.C.	
Meyers, Gilbert L.	Minot, N.D.
Co. G, 3rd Infantry, Fort Snelling, Minn.	
Ashkins, Milton H.	Cleveland, Ohio
Ordnance Department, France Field, Panama	
Small, James Garfield	Johnstown, Pa.
Coast Artillery School Det., Ft. Monroe, Va.	
Purinton, William R.	Clyde, Texas
Hq. Battery, 77th F.A., Ft. D.A. Russell, Tex.	

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FAIR SEX INSPECT SELFRIDGE FIELD

Eleven members of the famous "99" Club, an organization of women fliers, visited Selfridge Field, Mich., for a brief inspection trip on Sunday, June 20th. This famous organization of lady pilots was founded five years ago by Miss Amelia Earhart, Miss Louise Thaden and several others of the first few women to qualify as regular licensed aircraft pilots. The figures "99" are indicative of the fact that the Club was composed of the first 99 women pilots.

Two chapters of this organization were represented at Selfridge Field on Sunday. From the Detroit Chapter were Mrs. H.B. Britton, of Ypsilanti, National President of the Club; Mrs. Faye Kirk, of Detroit, Chairman of the Detroit Chapter; Mrs. Roy Hartung, of East Detroit, and Mrs. Baker, Mrs. Waggoner and Miss Von Mauch, the latter three having flown to Selfridge Field from the airport at Plymouth. The Cleveland Chapter of the "99" Club was represented by the Misses Bell and Pease and Mrs. King, all of whom flew from Cleveland. With the exception of Mrs. Britton, whose Waco was temporarily suffering from a broken propeller, all the members flew to Selfridge Field, where they were taken on an inspection of various activities at the Air Base, including the hangars of the 27th Pursuit Squadron, famous war-time fighting organization; the local weather bureau and radio station and the parachute department. Mrs. William Sweeley, a former charter member of the Club, had the members to luncheon at the Officers' Club following the inspection. All the lady pilots expressed great interest in what they had seen at Selfridge Field, and departed at 4:00 o'clock for their various homes.

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DUTY ASSIGNMENT OF TECHNICAL COLLEGE GRADUATES

Five Air Corps officers who have just completed a one-year course at Technical Colleges have been assigned to meteorological duties at various Air Corps stations. First Lieutenants Milton W. Arnold, Theodore M. Bolen and Sam H. Wiseman, who attended the California Institute of Technology at Pasadena, are under orders as follows: Lieut. Arnold to Kelly Field as Assistant Post Weather Officer; Lieuts. Bolen and Wiseman to Hamilton and March Fields, respectively, the former as Post Weather Officer and the latter to duty with the First Weather Squadron. First Lieuts. Ernest Moore and Rob't E.L. Eaton, who were students at the Mass.

(Continued on Page 14).

DAN CUPID IS GIVEN TACTICAL PROBLEM

Mention was made in the previous issue of the News Letter of the marriage at Delano, Calif., on Friday afternoon, May 21st, of Miss Alice Porterfield to Lieut. Kenneth Berquist, of the 37th Attack Squadron, Langley Field, Va., this organization being temporarily attached to the 13th Attack Squadron of Barksdale Field, La., during the West Coast Maneuvers of the GHQ Air Force.

The marriage ceremony or, as some confirmed bachelors would have it, the beginning of a permanent war, took place after the war games of the GHQ Air Force were officially over. At that time an unofficial field order was given the groom by order of Major Edward M. Morris and Captain Ned Schramm, with the approval of the entire 13th Attack Squadron. This order, which was read by Lieut. Noel T. Parrish, created much amusement and was as follows:

Last Field Order
Maps: State of Wedlock:

1. a. Information of the Enemy Group Situation. Lieut. Berquist, of this squadron, having just captured a member of the opposing sex, it is expected that he will be learning things about the common enemy of man. Lieut. Berquist's capture only goes to prove that no grounds are safe from the opposing sex. All are warned that even on the uncharted sea of matrimony there may be grounds for divorce, and that all members of the opposing sex left above the ground are dangerous. Enemy anti-aircraft has brought down a number of our pilots.

Enemy Air Situation.

The enemy air situation remains unpredictable, since members of the opposing sex are up in the air about something at least half the time. While the enemy appears to live in constant fear of the attack, they are likely to assume the offensive at any time. The opposing sex is known to be supplied with huge quantities of tear gas, which is their most deadly weapon. Concerning enemy bombardment, our observers report that they are likely to blow up at any moment, and that as human bombs they make the Japanese look sick. Explosions are usually preceded and followed by tear attacks. Enemy attack may come from any direction without warning. Observation of the enemy is fairly safe, but pursuit of the enemy is extremely dangerous

b. Information of friendly elements.

(1) Surface: In addition to Lieut. Berquist, other members of our forces have made similar captures although, according to Lieut. Berquist, none have been so noteworthy. We are making our captures according to the rules of war between the sexes, and always take the enemy alive. Since we are capturing the very heart of the enemy forces, we are constantly winning the war on the surface.

(2) Air: But in the air the situation is different. Our pilots make captures only to be thrown for a loss as far as the rest of us are concerned. Pilots who make captures often become so preoccupied in preventing their escape that they are no longer useful against the enemy. They find it necessary to give position reports by air, mail or telegraph every twenty-four hours or so, and no matter how far they fly they are still in the enemy intelligence net. If they fail to give report, they are certain to be attacked on the home airdrome. The enemy is particularly watchful of their night activities, and sometimes receive reports from surprising distances. Pilots of our squadron who have not made a capture are advised that delay may be fatal, since eventually either capture or be captured. Sometimes it's hard to tell the difference. While it is true that captures are best made at night, it is usually better to look over possible objectives in the daylight before making a final selection.

At Los Angeles the enemy has been very successful with camouflage. Maneuvers leading up to capture of the enemy are best performed at night, and it is well known that moonlight weakens the enemy defense. Radio is a great aid on the attack, which would be performed in a quiet, gliding manner with lights out, and a minimum of noise. However, some pilots have used hot air with great success. Enemy defense activities are impressive but should not be taken too seriously. In fact, some of our most successful pilots report that the enemy is more dangerous after capture than before. And it is known that pilots wounded in unsuccessful attacks become the stubbornest fighters we have.

2. Decision of the Commander.

It is the decision of Lieut. Berquist's Flight Commander, Captain Schramm, and of his Squadron Commander, Major Morris, that hostilities will cease for one hour while Lieut. Berquist's captive openly acknowledges her surrender, and that an Aerial Review (simulated) be flown in honor of Lieut. Berquist's great feat, since he made his capture single handed from coast to coast.

Our Squadron will be supported in this review by a flight of nymphs and cupids from Elysian Field.

Time of take-off: Sunrise.
Formation of review: Hearts and arrows.
Direction of review: Toward Venus.
Assembly point: At the altar.
Rallying point: Pete's Place.

3. Ammunition:

Machine guns will be loaded with rice, bomb racks with old shoes and chemical tanks with giggle water.

4. Uniform:

Each pilot will wear black goggles to prevent jealousy. Also in recognition of Lieut. Berquist's new position, each pilot will wear a noose around his neck and a ring through his nose.

5. a. Plan of Signal Communications: Radio frequency: waltz time.

b. Command Posts: Lieut. Berquist at 1750 relinquishes command of himself and all accoutrements. Command to be vested henceforth and forevermore in Mrs. Berquist.

By order of Major Morris and Captain Schramm, with the approval of the entire 13th Attack Squadron, and the kind assistance of Father Martin:

RICHARD H. LEE,
S-3.
NOEL F. PARRIS,
S-4.

Unofficial:
FRANK C. NORVELL,
S-1.

Annexes: Who knows? They happen in the best of families.

Distribution: Coast to Coast.

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NEW ATTACK PLANE PLEASES ARMY PILOTS

The Correspondent of the 90th Attack Squadron, GHQ Air Force, Barksdale Field, La., reports that when the pilots of this organization returned from the West Coast GHQ Maneuvers on May 24th they were pleasantly surprised to find six new A-17A airplanes waiting for them.

As is usually the case when new airplanes are delivered to an organization, the pilots were anxious to fly them. Before the airplanes were released for flight by the Engineering Department, however, their number had increased to nine. After local flying in the daytime in which all pilots checked off, and after one or two skull practices at which we were instructed in the art of retracting and lowering the landing gear, we went on a night schedule from 7:00 p.m. to 1:00 a.m., and flew seven A-17A airplanes in formation.

For the last ten days we have flown the A-17A airplanes at night in from seven to twelve-ship formations. All missions were from three to four hours in duration and were combat missions, either night machine gun or night bombing, or both. No difficulty has been encountered with the landing gears as yet, and we hope there will be none.

The A-17A airplanes appear to be from 15 to 20 miles per hour faster at cruising speed than the A-17's. One time schedule called for a ground speed of 170 miles per hour, which was easily maintained.

To say the least, all the pilots who have flown them are well pleased, and after a flight they invariably say:'Man, that sure is a swell airplane."

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Technical College Graduates

(Continued from Page 12)

Institute of Technology, Cambridge, Mass., were assigned to Langley and Scott Fields, respectively, the former to duty with the Second Weather Squadron and the latter to duty as Post Weather Officer.

Other Air Corps officers assigned to meteorological duties were:

First Lieut. Harold H. Bassett, from Hamilton Field, Calif., to the First Weather Squadron and duty as regional control officer, First Weather Region, with station at March Field, Calif.

First Lieut. Julius K. Lacey from duty with the GHQ Air Force, Langley Field, Va., to duty with the Second Weather Squadron as regional control officer, Second Weather Region, Langley Field, Va.

Captain Leon W. Johnson, from duty with the GHQ Air Force, Barksdale Field, Shreveport, La., to the Third Weather Squadron and duty as regional control officer, Third Weather Region, Barksdale Field, La.

First Lieut. Arthur F. Merewether from duty with the GHQ Air Force, Barksdale Field, La., to duty with the Third Weather Squadron at that station.

First Lieut. Anthony Q. Mustoe, from duty with the GHQ Air Force, Selfridge Field, Mich., to duty as post weather officer at that station.

First Lieut. Royden E. Beebe, Jr., from duty with the GHQ Air Force, Mitchel Field, L.I., New York, to duty as post weather officer at that station.

First Lieut. Torgils G. Wold, from duty with the GHQ Air Force, Langley Field, Va., to duty with the Second Weather Squadron at that station.

The above duty assignments take effect on July 1, 1937.

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GAS MODEL AIRPLANE MEET AT KELLY FIELD

The International Gas Models Association of America held a State Meet at Kelly Field, Texas, on June 6th. Forty aspiring model builders entered their creations.

Mrs. James P. Patterson, of Fort Worth, was the only woman entrant. Her model made several successful flights but crashed before the final event.

The progress of the meet was announced to the large crowd of spectators over a public address system installed by the Inter-State Theaters Company by Mr. F.W. Schreiber.

First place in the Meet was taken by Mr. Morton Bourland, of Fort Worth, with a time of 5 minutes, 27 seconds. The model he entered is one of his own design. Second place was won by Mr. J.P. Cockrill, of San Antonio; third place by Mr. Jack Beckelman, of Fort Worth; fourth place by Private William Hewgley, of Kelly Field. A high wind during the afternoon delayed the competition. After the wind died down, the events proceeded and were completed shortly after dusk.

The News Letter Correspondent states that a great deal of interest is shown here in San Antonio, as well as other large cities of the State, in model building and flying, and that officials of the International Gas Models Association of America, of which there is a chapter in San Antonio, predict that State Meets which they plan to stage here will draw more entries and larger crowds of spectators as interest becomes more widespread.

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NOTES FROM THE WASHINGTON OFFICE

Brigadier General James E. Chaney, Commandant of the Air Corps Training Center, Randolph Field, Texas, was a visitor in the Chief's Office during the course of a navigation flight.

Major Ray A. Dunn, of the Middletown Air Depot, dropped into the office while on leave of absence. He says that he has in preparation a series of articles on insurance for aviators which should be of considerable interest to all Air Corps personnel. He promises to send them in for the News Letter for publication.

Officers who recently returned from leaves of absence were Colonel William C. McChord from West Point, and Lieut. Colonel Gerald E.Brower, who tried his skill as well as his luck with the rod and reel.

Officers departing on leaves of absence were Lieut. Colonel Lynwood B. Jacobs on June 14th and Major Leland W. Miller on June 18th.

Visitors to the Chief's Office during the past two weeks were Colonel John H. Howard, Commanding Officer of the San Antonio Air Depot, Duncan Field, Texas, on June 14th, while on leave; Lieut. Colonel Harrison W. Flickinger, for temporary duty; Major John F. Whiteley, of Langley Field, Va., for conference; Captain Harry H. Mills, Instructor Michigan National Guard, Detroit, Mich., during the course of a training flight; 1st Lieut. William L.Kennedy from Kelly Field, Texas; 1st Lieut. Robert D. Johnston, from March Field, Calif.; and 1st Lieut. George W. Hansen, from Maxwell Field, Ala., while enroute to Mitchel Field, N.Y.

Major Edward V. Harbeck, Jr., of the Inspection Division, departed June 12th on an inspection trip to Barksdale Field, La.; Houston, Texas, and Fort Crockett, Texas.

Captains Donald F. Stace and M.E. Gross, of the Supply Division, returned June 18th from Aberdeen Proving Ground, Md.

Majors Alvin C. Kincaid and Austin W. Martenstein returned June 16th from a navigation flight to Spartanburg, S.C.

Major Karl S. Axtater returned June 11th from a navigation flight to Salt Lake City, Utah.

Officers departing on navigation flights were Major James A. Mollison to Maxwell Field, Ala., on June 11th; Major William B. Souza to Mitchel Field, N.Y., on June 12th, and Captain James B. Jordan on June 27th.

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WAR DEPARTMENT ORDERS

Changes of Station

To March Field, Calif.: Major Warner B.Gates, upon completion of present course of instruction at Advanced Flying School, Kelly Field.

To Randolph Field, Texas: Major Lawrence A. Lawson, from Moffett Field, Calif.; 2nd Lieut. John K. Brown, Jr., from Brooks Field, Texas.

To Kelly Field, Texas: Major Albert C. Foulk, from March Field, Calif.

To Maxwell Field, Ala.: Captain David J. Ellinger, from Chanute Field, Ill., for duty as student in 1937-1938 course at the Air Corps Tactical School.

To Wright Field, Ohio: 1st Lieut. Millard L. Haskin, for duty at Materiel Division.

Orders Revoked

Assignment of Captain Clarence F. Horton, Maxwell Field, Ala., for duty as student in 1937-1938 course at Air Corps Tactical School.

Promotions

To Captain, with rank from June 16, 1937: 1st Lieuts. Walter W. Gross, Otto C. George and John N. Jones.

Extended Active Duty

Second Lieut. Fred Delaway Stevers, Air Reserve, of Chicago, Ill., to active duty at Langley Field, Va., to June 27, 1940.

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ACCIDENT CAUSES DEATH OF TECH. SGT. FERGUSON

An unfortunate accident occurred at Kelly Field, Texas, on June 18th, which caused the death of Technical Sergeant Archie L.Ferguson, 12th Air Base Squadron. While repairing the remote control release which turns off the radio beacon transmitter, Sergeant Ferguson came in contact with a high voltage wire. Instant death resulted.

Sergeant Ferguson was born in Carroll County, Iowa, June 2, 1903. He enlisted in the Air Corps March 18, 1922; served with the 16th Observation Squadron to October 8, 1930; with the 23rd Bombardment Squadron to March 2,1931; with the 75th Service Squadron in the Hawaiian Department, to December 2, 1933; at Chanute Field, Ill., to January 23, 1935, and since that time at Kelly Field, Texas, with the Advanced Flying School Detachment and later with the 12th Air Base Squadron. In January, 1926, he graduated from the Radio Mechanics Course at the Air Corps Technical School, Chanute Field. He was appointed to the grade of Sergeant in September, 1924; to Staff Sergeant in March, 1925; and to Technical Sergeant, June 17, 1930.

Sergeant Ferguson is survived by his widow, Mrs. Marion J. Ferguson; two daughters, Doris, 9, and Thelma, 8; and a son, Archie,Jr., 5 years of age.

Interment was in the National Cemetery at Fort Sam Houston, Texas.

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GRADUATION EXERCISES AT KELLY FIELD

Sixty-two student officers and Flying Cadets finished the course at the Air Corps Advanced Flying School, Kelly Field, Texas, and were awarded certificates of graduation on June 9th.

Airplanes piloted by the members of the graduating class passed in review at 9:30 a.m. before Major General James K. Parsons, Brigadier General James E. Chaney and a crowd of several hundred spectators.

Graduation exercises took place at 10:45 a.m. in the Post Theatre. General Parsons, commanding the Second Division and Fort Sam Houston, Texas, delivered the graduation address. He was introduced by General Chaney, commanding the Air Corps Training Center.

The class was composed of 8 Air Corps officers, two officers from other branches of the Army, two foreign officers and 52 Flying Cadets. Their names were listed in the previous issue of the Air Corps News Letter.

THE BALLAD OF JUGHAID JAKE
(No apologies)

Jug-haid Jake is the name of a rake
Who flew an "A" Seventeen;
'Neath high tension lines and Burma-shave signs
A-rolling his wheels on the green.

From Barksport town came our low-flying clown,
To the land of the setting sun,
Where the March Field guys, sensible and wise,
Such dangerous tactics did shun.

Oh, loud laughed he, when he chanced to see
The boys from the Seventeenth Attack
Circle a week, just to clear a tall peak,
"So much in courage they lack."

With loud guffaws he cracked old saws
About fair weather pilots and such;
And raved of the thrill of clearing a hill
By an inch - or not that much.

On a morn in May, in his bunk he lay,
Dreaming of new things to do -
When the O.D. came and called his name,
"Up, Jake, take off at two."

'To Muroc Lake you must presently take
Your flight, and as you pass
O'er the luckless scamps in the pea-shooter camps
Just loosen a load of gas."

Long before day the flight was away,
over Castiac, Saugus, Tejon.
In formation tight they flew thru the night,
To Fontana and up thru Cajon.

Over Mirage Lake, just after day break,
Skimming the desert's floor.
Flying North-North-West on his warlike quest
He raised dry Muroc's shore.

Down the long slope the hedge-hopping dope
Roared to a target so clear;
Down to the flats where forty brass hats
Were aroused from their slumber so dear.

The boys from the West tried their dead-level best
To keep him from going too low.
But the lad in the lead, thought it was a bright deed
To stage a rousing good show.

So he got in a stew and the first thing he knew,
He was flying where free air was not.
To his utter surprise the lake bed did rise,
"What the hell, ain't this thing a yacht!"

The wing section moaned and the oleos groaned
And the landing gear gave with a scream.
He felt quite abashed that the ship had been smashed
While he coasted along in a dream.

So at Bakersfield town he set the plane down
To see what damage he'd done.
Said the boy on his wing "I did the same thing -
Two ships to Rockwell, not one."

Back to his base with shame on his face
Went Jake, the reckless one.
With caution his motto, lest he go blotto,
And his time with the Air Corps be done.

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COMMAND AND GENERAL STAFF SCHOOL GRADUATES

Graduation exercises for the regular class of the Command and General Staff School, Fort Leavenworth, Kansas, were held on June 21st. Following the invocation by Chaplain Luther D. Miller, U.S.A., Brigadier General Charles M. Bundel, U.S.A., Commandant of the School, introduced the guest of honor, Hon. Harry H. Woodring, Secretary of War, who delivered an address. Mr. Woodring also presented the diplomas to the graduates. The exercises were concluded with the benediction by Chaplain Miller.

Of the total of 237 graduates, 38 were Air Corps officers, as follows:

Lieut. Colonels

Crom, William H.
Kepner, William E.
McClelland, Harold M.
Sorenson, Edgar P.

Majors

Cannon, John K.
Clark, Harold L.
Davidson, Joseph H.
Eaker, Ira C.
Gaffney, Dale V.
George, Harold L.
Gothlin, Oliver P. Jr.
Halverson, Harry A.
Kiel, Emil C.
Larson, Westside T.
Tooher, Bernard J.
Upston, John E.
Waller, Alfred E.
Wolfe, Kenneth B.

Captains

Caldwell, Charles H.
Chidlaw, Benjamin W.
Crawford, Alden R.
Cumberpatch, James T.
Douglass, Robert W., Jr.
Dulligan, John H.
Ferguson, Homer W.
Ferris, Carlisle I.
Mayhue, Don W.
Moon, Ernest S.
Old, William D.
Oliver, Robert C.
Quesada, Elwood R.
Shea, Augustine F.
Snavely, Ralph A.
Twining, Nathan F.
Weikert, John M.
Whitten, Lyman P.
Williams, Robert B.

1st Lieutenant

Fair, Ford L.

---oOo---

ARMY WAR COLLEGE GRADUATES

At the graduation exercises at the Army War College, Washington, D.C., on June 23rd, the Hon. Harry H. Woodring, Secretary of War, delivered the principal address. There were a total of 95 students in the graduating class, comprising officers from the various branches of the Army, also officers from the U.S. Navy and the Marine Corps. Ten members of the graduating class were Air Corps officers, viz:

Lieut. Colonels

Connell, Carl W.
Cousins, Ralph P.
Farthing, William E.
Hale, Willis H.
Howard, Clinton W.
Wooten, Ralph H.

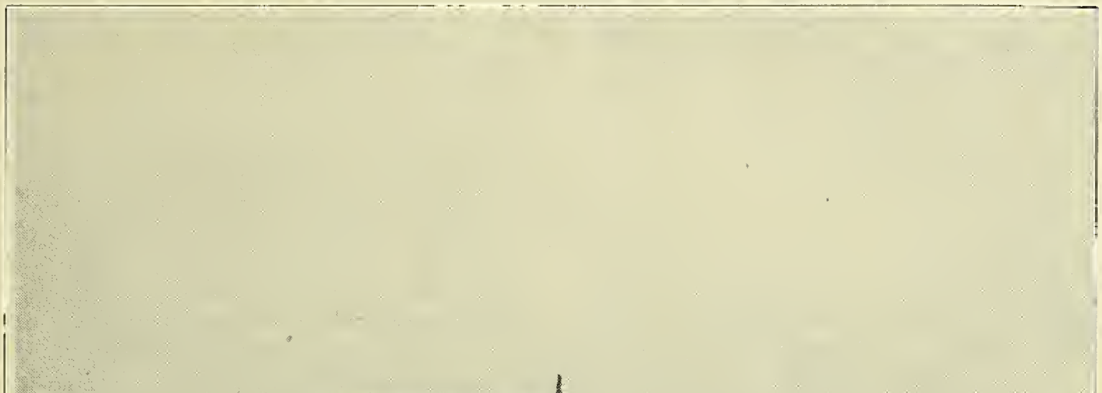
Majors

Fairchild, Muir S.
Hough, Romeyn B., Jr.
Vanaman, Arthur W.

Captains

Thomas, Charles E., Jr.

AIR CORPS
NEWS LETTER



FLYING FORTRESS FORMATION IN ECHELON
PHOTO BY 2ND PHOTO SEC.

ISSUED BY
THE OFFICE OF THE CHIEF OF THE AIR CORPS
WAR DEPARTMENT
WASHINGTON

VOL. XX JULY 15, 1937 NO. 14

VOL. XX AIR CORPS NEWS LETTER NO. 14.
Information Division
Air Corps
July 15, 1937
Munitions Building
Washington, D.C.

The chief purpose of this publication is to distribute information on aeronautics to the flying personnel in the Regular Army, Reserve Corps, National Guard, and others connected with aviation.

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NOW IT CAN'T BE TOLD

By Major Ira C. Eaker, Air Corps

(Being a little-finger nail sketch of a year at the C & GSS)

At long last - last June 21st - I escaped from the Little House at Leavenworth, as students affectionately call the Command and General Staff School, perhaps in contra-distinction to its next door neighbor "The Big House," Federal Penitentiary.

Since steering my diploma across the old bridge over the Missouri at a high rate of speed 20 minutes after graduation, headed East, prospective students have asked me about the year spent there.

No student can evaluate adequately his school, its course and what it has done for him one month after graduation. The heart-burnings and hardships, which in the long pull in the years to come are really of little consequence, are too fresh in mind, while the late graduate has not yet had a chance to try out the tools which so recently have been placed in his horny hands. With this apology and warning, and by request, a few loosely connected observations remembered about the past year follow.

A word about the setting. The Post, Fort Leavenworth, is located on high banks overlooking the Missouri River. It is an old post, having been established early in the 19th century by Major Leavenworth as an Indian outpost and a jumping off place for the long trek to the far West. It is filled with great old trees and presents a pleasing appearance. Unfortunately, some of the quarters, built about the time of the War between the States, still serve inadequately. The new quarters and those which have been renovated and revised are excellent and perhaps half of the students can be accommodated in these. The other half live in what is kindly called the "bee-hive." It is a long, rambling, three-story structure, a former barracks, cut up into myriads of small, very hot and very noisy apartments. Students of lower rank are gathered here.

The post authorities have done all they can to give the students adequate accommodations, and every set is equipped with a study, an isolation ward where maps can be hung on walls and texts can be stored against the day of need. I believe that every graduate will agree that the authorities there have spared no pains to make the year at Leavenworth as compatible with the study life as lies within their power.

The class rooms are very good and very bad; Grant Hall, a large assembly room where the opening lectures occur, is very hot and poorly ventilated, especially when motion pictures or slides are used for illustration. The two group lecture halls, where the majority of the lectures are given, are air conditioned and well lighted, quite livable. The map problem rooms, where the luckless student spends each Friday afternoon from one until five, are past all understanding; nothing lies between the bewildered student and the Kansas sun, save a pane of glass, as these rooms are on the top floor of the school building, and glass has been substituted for the roof in order to provide light for map reading.

The post exchange is excellent, the commissary is adequate, the golf course, swimming pools and tennis courts are highly satisfactory. There is but one poor squash court, but more are promised. Riding facilities abound, but more, much more, of that later. The library in the school building is probably one of the best military libraries in this country, where the student with inclination toward the best in military literature will find many volumes, old and new, to gladden his heavy heart. This reading will have to be done on his own time, as the present one-year course cannot provide reading assignments or library periods.

Now about the course of instruction. The early stages of the course are filled for the most part with lectures by representatives of each of the branches, Field Artillery, Cavalry, Infantry, etc., to acquaint the student with the equipment, organization and tactics of that particular arm. The afternoons during this period are spent ahorse on staff rides and terrain exercises.

At this period the school-boy meets his mount. He learns the significance of the great sign at the gate: "Horses

Have Right of Way." A squadron of the 10th Cavalry is stationed at Leavenworth to insure plenty of mounts and to provide care for horses and equestrian instruction. Rainy days will not save you, for there are two indoor riding halls for such emergencies. These halls have mirrors so that the rider can see his "seat" as he gallops past. This is the only inquisitional relic left over from another day. Many of the Air Corps officers are not well adapted to horsemanship at best, but to be compelled to see themselves in the cockpit puts the high lights in an unpleasant picture.

Many of the mounts have served for a long time. The first day of riding Bill Kepner walked up to the horse which had been assigned him, stopped, looked puzzled and finally turned to the groom with a query: "Sergeant, what is the title of this horse?"

"Resurrection, Sir," came back the prompt reply.

"I thought so," Bill said. "He is the mount they gave me when I came here in 1917 as a shave-tail Cavalryman."

As the decades have slipped by these old quadrupeds have grown very wise in their work. Some students have affirmed that their mounts have helped them through some of their worst GTE's (General Terrain Exercises). "Abbie" Waller was wont to work his GTE's sitting on the ground, holding his horse's reins, while the beast looked over his shoulder. Abbie would put down a solution on his map, then look up. If the horse shook his head, Major Waller promptly changed his set-up. It worked. At last rumor he was without a "U" on the problems held on the prairies.

After the shake-down lectures and five-cent terrain exercises, come illustrative problems concluded each week by the map problems on Friday afternoons. For example, we would fight for a week all over the Gettysburg map, following a division through every phase of an attack; then, on Friday afternoon, they would give us a map problem to see how much we had learned; but the map problem would be on a French map, concerning a luckless Corps in defense. This peculiar system may have been devised to discourage the G-2 experts.

The monotony of illustrative problems and map problems is broken frequently by historical illustrations, some on the biblical wars, some on the Civil War and many on the Great War. These were well done, highly instructive and interesting. Major Koenig's lectures on the battles of Gumbinnen and Tannenberg are classics, both as to method and manner of presentation and from the historical point of view.

The last two weeks of the school year are spent in the field at a tent camp some ten miles from the post. The first week of this period is devoted to ten GTE's; the last week with a CPX (Command Post Exercise). The ten GTE's carry much pay dirt, are the last marked problems, and really conclude the course. The CPX finds two armies in a death struggle, handicapped by students filling all staff and command positions.

Now for advice to prospective students. The one thing all graduates are filled with is a burning desire to tell the freshman how he should shape his student career. But the missionaries' zeal to save the Heathen must find vent. High on my list of "dont's" stands this: don't be afraid of U's. I believe the best luck a student can have is to get a "U" on his first pay problem; it breaks the ice, relieves the tension, and otherwise has a very desirable cathartic effect. General Bundel, the present Commandant, said in his opening address that he got a U on his first problem. I think that remark did more to ease the tautness in the class than anything which could have occurred.

My next advice is a "do" not a "don't." Develop a sense of humor; if you haven't that superlative humor which will permit you to laugh at yourself, then laugh at your fellow students or at the school; they don't seem to mind. One time when a number of "U's" came out of a particular map problem there was great indignation, when suddenly a little Chinese student came up with this one:

"Well," said he, "It's a funny school, it asks you more than it tell you."

Near the close of the school there was much speculation as to which of the students were still virgins - that being the term applied to those who had no unsatisfactory marks. One student was proclaiming to all comers that he was one of that lucky number. Finally it got on the nerves of a friend of his who had not been so fortunate, and he cut back with:

"Virgin, hell, you're a gold star mother!"

One student got a paper back on which there were many cuts "in part." That school boy was heard muttering to himself indignantly: "If this school ever hears of The Sermon on the Mount they'll approve of it in part; they'll say the Lord should have had eight disciples instead of twelve and the sermon should have been delivered in the valley under cover of darkness." Such safety valve blasts demonstrate my point; most of the seeming indignities can be laughed off.

The next "don't" applies with particular emphasis to Air Corps officers: don't ruin your eyes. That is easy to do but is not necessary. One can read all the assignments in two hours every night. That period of study spent conscientiously is all that is required to get what the course has to offer; the authorities tell you so themselves and urge all students to be abed by 10:00 p.m. That will not get you first place in the class; it may not land you among the first ten; but, there is no pay-off for top standing. What the student should do is "get the big picture," the large wind on the prairies, as it has been paraphrased. That can be done without ruining your health or eyesight. To me the saddest experience there was to see Air Corps officers under forty years of age blossom out with glasses.

The next and last don't is: don't fight the course. If you don't agree with the school on a particular solution or doctrine, just make a mental note of it; keep your opinion to yourself. The school authorities don't seem to relish it when some student explodes with a contrary opinion, thought up on the spur of the moment, when some twenty or thirty instructors have spent several thousand hours getting up a solution. Who could blame them? Students fresh from the branch schools are frequently more up-to-date on some points in technique and tactics than the instructors, who have been some years out of those same schools. That can't be helped. Students who inject personal observations too frequently generally find themselves bereft of sympathy from their fellow students.

Should an Air Corps officer take the course at the Command and General Staff School or should he go to the Industrial War College? I have not had the latter course; I hope to get it; reports have it as one of the best schools in the military service. But this I believe: if you are one of that number who elects to stick with the troop or command side and who hopes eventually to staff or command large organizations, by all means take the course at the C & GSS. It will teach you more about staff than command, but it will help you a lot on the latter score; if in no other way it will show you by historical example what not to do.

A course at the C & GSS will not teach you which shell the pea is under in this shell game called the art of war; but it will teach you what is probably more important, that it doesn't make any difference.

Some years ago Colonel Kilner was taking a course at the Air Corps Engineering School. A friend, remembering that he had but recently commanded six thousand men during the War and had been a Colonel at twenty-eight, asked him:

"What are you doing here? This school is for youngsters."

Colonel Kilner sagely replied: "Well, for years every time I have asked one of these engineers a simple question, he has looked mysterious, pulled out a slide rule and started slipping it up and down. When I get through here and one of them starts that I can say to him: 'Don't do that, I can do that too.'"

Therein lies perhaps the crux of all education. You may not know the answers but you know where to find them or who does know them. At any rate, you learn your own limitations.

One other fine thing the course at the Command and General Staff School will do. It will teach one not to be afraid of those mighty military words - technique, tactics and strategy; it will show that much of the material which has paraded under those mysterious terms for years is, when shorn of its Smith Brothers beard, in reality abracadabra, hocus-pocus and petty piffle.

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SMOOTH CONTOUR WHEELS

The Materiel Division, Wright Field, Ohio, reports that a new line-up of wheels, tires, and brakes to replace the present standard "Streamline" series has been advanced to the stage of issuing procurement specifications. The new series will be known as the "Smooth Contour" type. Units have been produced to date for airplanes having gross weights of 24,000 to 60,000 pounds, and specifications for much greater weights of airplanes are available.

The "Smooth Contour" wheel and tire assemblies will have tires mounted flush as did the streamline series, but will be wider in proportion to their diameters, will have better soft ground characteristics, and the tires will be easier to mount and service.

The Seversky P-35's, the Curtiss Y1A-18's, and the North American O-47A's will be the first airplanes to reach the service with "Smooth Contour" wheels.

---oOo---

A Post Signal School was started at Maxwell Field, Ala., on July 8th, to train men in radio and meteorological work. Sergeant Borders, Headquarters Squadron, was appointed as instructor, under the supervision of 1st Lieut. Choate, Officer in Charge of that Department. Six members of Headquarters Squadron, Pvts. 1st Cl. Biggs, Waters and Weese, Pvts. O.L. Evans, E.D. Walker and Rushing have been selected to attend this school. A number of enlisted men from other Squadrons at Maxwell Field have also been designated to attend this school.

ARMY TRAINS HALF OF AIRLINE PILOTS

"Where do the air lines get their pilots?"

"How can I train myself for an air line pilot's career?"

If you were director of personnel for one of the major air lines these two questions, through constant repetition, would become extremely familiar. Fortunately, according to Victor Vernon, director of personnel for American Airlines, Inc., the answers are easy. In fact, one answer will serve both questions:

"Join the Army!"

The youngster whose heart is fixed on a pilot's career will find his greatest opportunity in the Army Air Corps, according to Vernon, for 63 per cent of all the pilots on American Airlines' nation-wide system are service trained with nearly 56 per cent from the Army alone.

The reason for this, he explained, is two-fold. First, Army trained pilots have proved ideal material for air line work. Trained in discipline and thoroughly versed in the fundamentals of flying, Air Corps officers are usually quick to get in step with transport requirements. Too, the air lines provide an ideal opportunity for the army pilot whose term with the services is ended but who wants to keep active his flight training.

Second is the almost prohibitive cost of private pilot training. No pilot can qualify for a second pilot's position with an air line until he has amassed a minimum of 1,000 hours actual flying experience, and the cost of buying this much time can be conservatively estimated at $10,000, or $10 per hour. Of course, it is not always necessary for the student pilot to actually expend this amount, but unless he is fortunate in obtaining a private flying job soon after he gets his license the only way he can build up his time is to buy or beg it.

Thus, the logical answer is the Air Corps, and the way this has worked out is shown in a survey of personnel records covering the 260 first, second, chief and reserve pilots in American's corps - the largest in the world. This survey analyzes preliminary training of pilots as follows:

Army	145	55.8 per cent
Navy	12	4.6 per cent
Marine	7	2.7 per cent
Private	96	36.9 per cent

Preliminary training is specified because the pilot who comes to the air line is given a thorough course of advanced training, including at least two years' service as a second pilot, before he is placed in command of his own plane.

It can be safely said that more time and money is necessary to train a student pilot from the time of his solo flight until he assumes his own command of a transport plane than it does to train a medical student from his pre-medic days until he hangs out his own shingle and starts practice as a licensed physician.

- From "Contact Magazine."

Touching on the departure of one of the members of his organization, a Reserve officer, to accept a position with a commercial air line company, the News Letter Correspondent of the 37th Attack Squadron, Langley Field, Va., states:

"It was a very sorrowful day for the entire 37th when they had to bid goodbye to Lieut. Russell, who departed on June 29th to accept a position with Eastern Air Lines. He was a veteran member of the 37th, having served with the organization as an enlisted man, a Flying Cadet and a Reserve officer. This red-headed Arizona lad is certainly a great loss to the Air Corps, for a better officer and pilot could not be found. To Eastern Air Lines we offer our congratulations for obtaining a man who will undoubtedly prove to be an invaluable asset to the Air Line. The entire personnel of the 37th Attack Squadron bids a fond 'adieu' and 'happy landings' to our smiling 'Red' Russell."

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A RECORD LOW JUMP

"Those Caterpillars in the United States who point with a degree of pride to the fact that they have enjoyed the rather rare experience of a successful 'chute jump from an altitude of 200 feet or less are sissies!"

The above is the assertion of the News Letter Correspondent of the 36th Pursuit Squadron, Langley Field, Va., who goes on further to say:

"It remained for Lieutenant Musgrave, whose name I intended to omit in the interest of self-preservation, to jump the acme of jumps. He had far less than a hundred feet of air between him and a pulpy death. In fact, there were only five feet of it, for he had completed a landing, apparently without benefit of drama, and had taxied up to the line, when he came face to face with - a situation. The climax! Suddenly a sheet of flame enveloped the motor and threatened to engulf the cockpit and its perturbed occupant in one full swoop.

But our subject is not to fill a martyr's grave. Remarkably cool - considering all the Fahrenheit ensuing from the motor - he turned to his rear gunner and yelled, 'Bail out.' Suiting the action to the word, Musgrave poured himself nimbly over the side, leaving behind him, instead of the flaming torch you may have expected, a comparatively innocent airplane with a motor which had simply executed any self-respecting motor's prerogative of backfiring through the exhaust and belching out flames and smoke on occasion, and without apology. Property was unscratched and personnel were unscathed.

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INTRODUCING FORT KNOX, KY.

The first contribution to the News Letter received from Fort Knox, Ky., is written in a more or less wistful vein. The Correspondent states that the 12th Squadron moved by train, official car convoy, private car convoy, and private cars individually from Brooks Field, Texas, to Godman Field, Fort Knox, Ky., on June 20th. The Squadron had just been reorganized, and between the uncertainty of the movement (train, air or horseback) until just a few days before departure and the reorganization, the Squadron made a good record. Every car, including the gas truck, came through without delay or irregular incident of any kind.

"We are here helping the mechanized Cavalry with promises and guarding Uncle Sam's gold with our lives and one borrowed PT," says the Correspondent, and he then adds: "We hope some more fortunate individuals will drop in and see us on their journeys east and west and north and south. We are right in the center of everything,- 35 miles from Louisville, 150 miles from Nashville, 300 miles from St. Louis and 335 miles from Chicago. Please drop in and let us see what an airplane looks like. If we should ground you because we are hungry for a flight, don't be surprised. That is normal procedure and the only way we have to get any flying at all.

As to the facilities, we have an open air hangar and plenty of ground to make a flying field. At present we have two landing strips, 1500 feet and 1800 feet, marked with airplane silhouettes at the ends of each strip.

We almost forgot to tell you we also have a wind sock and two tent frames, but we don't own the frames."

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TRANSFER OF RESERVE OFFICERS

The following-named Air Corps Reserve officers (second lieutenants) have been relieved from assignment and duty at Brooks Field, Texas, and assigned to duty at the stations indicated:

To Moffett Field, Calif.: 2nd Lieuts. Russell LeRoy Flolo, John A. Pechuls. and Herbert Donald Schultz, Jr.

To Mitchel Field, N.Y.: 2nd Lieut. Ray Hamilton Martin.

To Scott Field, Ill.: 2nd Lieuts. Jack Thomas and Paul Wietzel Zehrung.

To Hawaiian Department: 2nd Lieut. George Sutton Brewer.

Each of the following-named second lieutenants of the Air Reserve were relieved from assignment and duty at Barksdale Field, La., and assigned to Brooks Field, Texas, for duty with a tactical unit of the Air Corps, viz:

Henry Ovide Bordelon
Howard Leavelle Buller
Edward Francis Cullerton
William Eades
Clarence Theodore Edwinson
Willard Dudley Griffith
Bingham Trigg Kleine
Roy William Osborn
Frank Beard Scott
Horace Armor Shepard
Cy Wilson
Robert Carroll Wood

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NEW MOTOR TEST BLOCK AT FAIRFIELD DEPOT

Under the direction of Major Ralph B. Walker, Chief Engineer, Fairfield Air Depot, a new motor test block has been completed and is now partially in operation. Many new and interesting features are incorporated in the design of this block which lend for speed and accessibility in engine overhaul. The block test building itself is so constructed that it is easily possible to increase the number of test stands, depending on the requirements. The present eight stands are fully capable of handling all of both the air-cooled and liquid-cooled engines which the Depot turns out under the present arrangement.

One of the interesting features included in this installation is an exhaust silencing device. This has proven entirely satisfactory and has been a great relief to Depot personnel and the surrounding community. Heretofore, the noise of the old test block was very objectionable, and this was a welcome improvement.

With this present installation and rearrangement in the Motor Assembly Line, the Fairfield Air Depot is now able to handle in the neighborhood of ninety engines per month, a considerable increase over the old set-up.

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AIR CORPS OFFICERS TO STUDY METEOROLOGY

First Lieuts. Marcellus Duffy, William O. Senter and Edwin G. Simenson, Air Corps, have been relieved from assignment and duty at Langley Field, Va., and detailed to take the summer course of instruction in mathematics at the Mass. Institute of Technology, followed by the regular course of instruction in meteorology, commencing on or about September 20, 1937.

PURCHASE OF PURSUIT PLANES

The award of a contract for 210 monoplace Pursuit airplanes to the Curtiss Airplane Division of the Curtis Wright Corporation, Buffalo, N.Y., was announced on July 6th by the Hon. Harry H. Woodring, Secretary of War. These new planes, including an adequate complement of spares, will involve an expenditure of $4,113,550.

Powered with one Pratt and Whitney two-row, radial, air-cooled engine, which develops 1100 horsepower for take-off, this low-wing all-metal cabin monoplane has a retractable landing gear and tail wheel, which adds materially to its high speed. Landing flaps reduce landing speed and space in which this airplane can be landed and the length of roll upon landing. It is also equipped with a constant speed controllable pitch propeller which allows quicker take-off and more efficient operation in flight. The award of this contract, the largest for single place Pursuit for several years, was made after exhaustive test of the airplane in competition with airplanes of other manufacturers at the Air Corps Materiel Division, Wright Field, Dayton, Ohio. The delivery of these airplanes to the Pursuit units of the GHQ Air Force will fill a long felt need for modern Pursuit airplanes in those units.

The function of the Pursuit airplane is the destruction of hostile aircraft in flight by the use of machine gun fire and time-fused or instantaneous fused bombs. It will be an important adjunct to National Defense in the protection of strategic areas and centers of population against hostile air attack in time of emergency.

These airplanes will be capable of a speed in excess of 300 miles per hour and will out-perform any airplane of their type now in our service.

Many features of this airplane add to its general efficiency of operation. Special attention has been given, in its design, to the ease with which the component parts of the airplane may be inspected, maintained and repaired.

Special attention has been given to avoid multiplicity of sizes and gages of tubes, bolts, rivets, etc., as well as general simplicity of design. The fuselage and wings were designed to facilitate the removal and replacement of damaged sections. Flotation gear has been provided in case the airplane is forced to land in the water.

It is readily convertible from a closed to an open-cockpit airplane. The bottom of the fuselage is so constructed that in case of emergency landing with landing gear retracted a minimum of damage to the airplane will result. This adds to the safety of operation of the airplane in that it may be landed in restricted areas with less danger of collision with other objects on the ground.

This order combines two years' requirements, which will mean a substantial saving in the unit cost of this type of airplane.

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NEW SWIMMING POOL AT PATTERSON FIELD

Patterson Field, Fairfield, Ohio, was the recipient of an unusual and elaborate gift during the past month.

On June 18th, Mrs. H.G. Carnell formally presented General A.W. Robins, on behalf of the officers of Patterson Field, a magnificent swimming pool, which is located directly in front of the new Officers' Club. This gift was presented in memory of her son, Frank Stuart Patterson, one of the first Army test pilots, who was killed near the field which now bears his name.

"It is needless to say," says the Patterson Field Correspondent, "the pool, as an addition to the already beautiful Club House at Patterson Field, is greatly appreciated by the post personnel, and these warm summer days have seen it in constant use."

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A CORRECTION

Maybe it was the heat, or perhaps the editor was thinking about the additional tax burdens on residents of the District of Columbia contemplated during the present session of Congress. Be that as it may, an error was made in crediting the article "The GHQ Air Force Maneuvers on the West Coast," which appeared in the issue of the News Letter of June 15th, to the Hamilton Field Correspondent. As a matter of fact, this article was sent in by the Public Relations Officer of March Field, Riverside, Calif.

The error is very much regretted, and we promise to be more careful in future.

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NEW CAPTAINS FOR THE AIR CORPS

Special Orders of the War Department, recently issued, announce the promotion of the following-named first lieutenants of the Air Corps to Captain, with rank from June 14, 1937:

George W. McGregor
Charles A. Harrington
Maurice F. Daly
Lawrence S. Kuter
George McCoy, Jr.
Julius T. Flock
John M. Sterling
Mark K. Lewis, Jr.
Orrin L. Grover
Milton M. Towner, Jr.
Fay R. Upthegrove
Chas. B. Stone, 3d.
John W. Kirby
Marion Huggins
Neil B. Harding
Robert L. Easton
Henry M. Bailey

---oOo---

Lieut. Colonel Junius H. Houghton, Air Corps, has been designated as Commandant of the Air Corps Weather School at Patterson Field, Ohio, July 1, 1937.

RADIO RANGE AND BEACON FOR 3D AIR BASE

Authorities at Selfridge Field, Mt. Clemens, Mich., the 3rd Air Base of the GHQ Air Force, announced today that plans have been virtually completed for the installation of a new and completely modern radio transmitting station, together with a new radio range and traffic control system. A parcel of about 25 acres of land near the junction of Henry B. Joy Boulevard and the Sugar Bush Road, approximately three-fourths of a mile due west of the Air Base, is being acquired by the Government as a site for part of the new installations. On this site will be erected five radio towers, including a central pole ninety feet high, and the ground building which is to house the radio range. This range sets up four invisible radio beams which are used by pilots at Selfridge Field in training for instrument flying, and by any pilot who wishes to locate himself or reach Selfridge Field during bad flying weather.

An additional concrete and brick building about 32 x 48 feet will be erected on the same plot of land to house a 400 watt transmitter.

This installation is being made because of the fact that present equipment now installed at Selfridge Field is not only becoming obsolete through lack of power, but also constitutes definite flying hazards for airplanes flying in the vicinity of the field during hours of darkness or in bad weather. The two present 150-foot towers directly north of the north-south runway are to be dismantled and replaced by lower 60-foot towers.

Plans call for the replacement of the present traffic control system by a new and modernized installation which will be housed in a glass-inclosed booth on top of the present Headquarters building. From this point, the Traffic Control Officer will not only be able to see and speak to all aircraft either on the ground or approaching the field, but will also be able to talk by remote control to any aircraft having equipment which will permit them to contact Selfridge Field.

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ARE CONTROL TOWERS USEFUL? YES!!!

With the following incident, the Control Tower at Mitchel Field, L.I., New York, has more than paid for its installation.

On June 14th, a pilot in an O-43 airplane on a navigation flight from West Point, N.Y., to Mitchel Field, attempted to land with wheels up. The operator on duty in the Control Tower, noticing the plane about 50 feet from the ground on the approach for landing, called the pilot by radio, advising him of his predicament in sufficient time to enable him to pull up and circle the field for another landing.

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STILL MORE CAPTAINS FOR THE AIR CORPS

Special Orders of the War Department, recently issued, announce the promotion to Captain of the following-named first lieutenants of the Air Corps, with rank from June 30, 1937:

Leo W. De Rosier
Gordon P. Saville
Charles B. Overacker, Jr.
George H. Macnair
James A. Ellison
Hoyt L. Prindle
James F. Walsh
George R. Geer
Donald W. Benner
Lawrence H. Douthit
George R. Acheson
Frank H. Robinson
Waldine W. Messmore
Herbert M. Newstrom
Allen R. Springer
Franklin C. Wolfe
Ford L. Fair
Ivan M. Palmer
Joseph G. Hopkins

---oOo---

LIEUT. WILSON RETURNS TO WEST POINT

First Lieut. R.C. Wilson, Air Corps, who has been a member of the staff of the Aircraft Branch at the Materiel Division, Wright Field, Dayton, Ohio, since August, 1932, left on June 25th for the U.S. Military Academy, West Point, N.Y., where he is to serve as an instructor.

The Materiel Division Correspondent states: "This is, in a sense, a return home for Lieut. Wilson, who is a graduate of the Academy of the class of 1928. He is also a graduate of the Primary and Advanced Flying Schools and of the Air Corps Engineering School of the class of 1933.

Lieut. Wilson's special assignment at Wright Field has been that of Director of the Special Research Laboratory and of the Accessory Design and Test Laboratory. His outstanding knowledge of the technical phases of aeronautics led to his selection for his new position.

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The following-named Air Corps officers, who have been designated as students to attend the 1937-1938 course of instruction at the schools indicated, were attached to Bolling Field, Anacostia, D.C., for flying duty only:

Army War College - Colonel Henry W. Harms, Lieut. Colonel Hubert R. Harmon, Majors John DeF. Barker, Warren R. Carter, Idwal H. Edwards, Lawrence P. Hickey, Harry A. Johnson, Alfred J. Lyon, Austin W. Martenstein and John Y. York, Jr.

Army Industrial College - Majors Shiras A. Blair, Don L. Hutchins, Clarence P. Kane, John A. Laird, Jr., Malcolm S. Lawton, Edward M. Powers, Robert T. Zane, Captains Julian B. Haddon and Harry H. Mills.

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ARMY FLIERS STUDY NAVIGATION EQUIPMENT

A group of five Air Corps officers, Lieuts. E.P. Musset, R.E. Koon, J.W. Egan, Wm. A. Matheny and C.H. Rees, of Langley Field, Va., recently concluded a three-day study at the Materiel Division, Wright Field, Dayton, Ohio, of new instrument developments in use in aerial navigation. Lieut. Egan, in charge of the group, is an instructor in the Air Corps Navigation School at Langley Field.

Flights in the airplane assigned to the Instrument Navigation Laboratory of the Equipment Branch of the Materiel Division, for the purpose of testing navigation instruments, were made by all the officers. Among the instruments under special study were new types of sextants especially designed for air work, a new ground speed and drift meter recently developed at the Materiel Division, and two types of automatic navigation computers which completely revolutionize the practice of air navigation as it has existed in the past.

The group returned to Langley Field on June 26th in two amphibian airplanes, which are being used at the General Headquarters Air Force Navigation School, Langley Field, for the purpose of air navigation study in both over-land and over-water flying. The amphibian type of airplane is being used for this purpose at various stations where such training is being carried on.

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GUNNERY EXERCISES AT VIRGINIA BEACH

A total of 45 officers and 332 enlisted men, transported in 31 PB-2A, 6 A-17 and one B-10B airplanes, 37 trucks and reconnaissance cars, and 60 privately owned conveyances, departed at 5:15 a.m. on June 24th from the Langley Field Air Base for the National Guard Airport on the State Rifle Range at Virginia Beach, Va. Camp was established and operations carried on at 10:30 a.m. The program called for Gunnery Exercises, involving aerial and ground targets, to be carried on during the two-week period to end July 8th.

35th Pursuit Squadron

After two weeks of grooming, preparation, and qualifying newly assigned pilots in the art of flying a PB-2A airplane with the greatest of ease, the 35th Pursuit Squadron moved into the field at Virginia National Guard Airport, Virginia Beach, Va., for a period of two weeks' gunnery and combat exercises to complete the training program of the 8th Pursuit Group for 1936-1937.

The camp to date has operated very smoothly, flying starting at 5:00 a.m. for the pilots firing on ground targets. For those more fortunate pilots who have already qualified, flying began at 7:30 a.m., and generally terminated around 10:00 a.m., so as to give the maintenance crews an opportunity to get their work completed by noon. The rest of the day was devoted to recreation, such as swimming, etc. According to the News Letter Correspondent, however, this was mainly an opportunity for the "Gable" and "Taylor" types of the camp to toss their charms at the fair sex and, he says, "they seem to be very plentiful here. We have to concede the boys a moral victory, as they seem to be doing quite well in that respect and we do hope nothing serious develops out of the summer romances of our heroes of the air.

For tactical training, the job of qualifying rear-seat drivers is at present the main activity, with instrument flying and individual combat running a close second. We are quite sure the 35th will come through with all 'Experts' as heretofore.

By the time the next issue becomes due, your correspondent will in all probability be thoroughly sun-burned and safely back at dear old 'Langley' which after all is not such a bad place to be sometimes."

36th Pursuit Squadron

At the present writing, we are going into the second week of maneuvers at Virginia Beach, with everything under control. Perhaps no part of the training program is looked forward to more eagerly by all concerned than this two-weeks' camp, which has become an annual feature of the summer periods.

37th Attack Squadron

The 37th Attack Squadron has again been in the field, this time with the 8th Pursuit Group at that famous summer resort - Virginia Beach. The dates of the field exercises were June 24th to July 7th, and the time was spent flying chemical and gunnery missions. "Beach Fatigue" seemed to be the favorite recreation for all personnel after recall.

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NAVIGATION FLIGHT FOR LANGLEY AIRMEN

A unit navigation flight, involving 12 PB-2A and 6 A-17 airplanes of the 8th Pursuit Group, Langley Field, Va., took off at 7:30 a.m., June 28th, from Virginia Beach, Va., for Patterson Field, Fairfield, Ohio, via Langley Field and Buffalo, N.Y. Adverse weather conditions held the flight up at Langley Field until 12:00 noon, at which time they proceeded to Buffalo, arriving there at 3:30 p.m.

After observing aeronautical activities at Buffalo, the flight took off at 9:30 a.m., June 29th, for Patterson Field, arriving there at 12:00 noon, and going on to Wright Field later in the day. A night unit navigation flight was then accomplished, the flight taking off at 2:00 a.m., June 30th, and arriving at Virginia Beach at 6:00 a.m.

WEST POINT CADETS AT MITCHEL FIELD

Three hundred West Point Cadets of the new (Senior) class received a practical taste of the way Uncle Sam employs his Air Forces at Mitchel Field, L.I., New York, for the period from June 12th to July 3rd. Because of the scarcity of airplanes and the lack of ample housing facilities at Mitchel Field, the cadets received their training in three echelons, each echelon remaining at the field for the period of one week.

Enlisted men of the 9th Bombardment Group stationed at Mitchel Field very graciously turned over their barracks to the cadets and moved into the 2nd Air Base Hangar, where temporary facilities were installed for their accommodation.

Mornings were devoted to various phases of flying, such as Orientation, Observation navigation, including a demonstration of the manner in which Bombardment squadrons practice against a target towed by boat. Each cadet received approximately seven hours of flying. The afternoons were devoted to lectures and interesting excursions to the various activities about the post.

The cadets demonstrated a keen interest in military aviation. In addition to scheduled flights, they devoted their leisure time to flying with the 9th Bombardment Group and the 97th Observation Squadron on regular scheduled training flights, both night and day.

On Wednesday afternoon of each week, a picnic was held at Jones Beach, New York State's largest bathing beach, where all privileges of the beach were at the disposal of the cadets as guests of the State. Each Thursday evening a Tea Dance was given at the Officers' Club, from 6:00 to 11:00 p.m., in honor of the cadets and their guests.

The tennis courts, bowling alleys and swimming pool were also available for their use during off duty hours.

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SUMMER NAVIGATION SCHOOL AT LUKE FIELD

The 5th Composite Group, Luke Field, T.H., organized a navigation school for the benefit of the 18th Wing, to continue through the months of July, August and September. Three officers, Lieuts. Davis, Knowles and Dennison, are attending from the 18th Pursuit Group, and eight officers are assigned to the class from the 5th Composite Group, viz: 1st Lieuts. Paul E. Ruestow, Herbert B. Thatcher, 2nd Lieuts. Abraham D. Olson, Samuel C. Mitchell, Louis W. Proper, Pelham D. Glassford, Jr., Willis F. Chapman and Joseph A. Thomas.

First Lieut. Richard C. Lindsay, Air Corps, Assistant Operations Officer and Group Navigation Officer, 5th Composite Group, is the instructor of the class, and hopes to turn out eleven expert aerial navigators. All phases of dead reckoning and celestial navigation are being pursued. Air training is starting in Amphibians, with advanced work being performed in Martin Bombers.

First Lieut. Robert W. Warren was assigned to function as Operations and Engineering Officer for the School.

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BIG GASOLINE SHORTAGE A FALSE ALARM

"One of the greatest hunts of all history is slowly dragging to an inglorious conclusion," says the News Letter Correspondent of the Hawaiian Air Depot, and he then goes on to say:

"About three weeks ago, rumors started circulating that the Supply Officer was short a mere fourteen thousand gallons of aviation gasoline. Action was immediately initiated to check all records for possible miscalculation and, in the meantime, the entire gasoline system was systematically investigated. Now let it be known that the base supply of gasoline located at Luke Field is not contained in one tank with a single nozzle. Actually there are seven ten-thousand and two two hundred and twenty-five thousand gallon tanks with some ten thousand feet of connecting pipes, not to mention sundry and varied expansion joints, all of this being the means to an end - six servicing points.

After much digging, a leak and a half was discovered, the half allowing gasoline to escape at the rate of about ten gallons a year. This damage was repaired, and about this time the Navy kindly offered us the use of a leak detector, complete, with skilled attendant. Said maestro threw up his hands in horror when shown the expanse of pipe to be checked, and promptly went home muttering strange naval epithets aimed more or less at our poor sick pipelines.

Believe it or not, there is a moral to this saga of misfortune - never start something you cannot finish, especially when there is no need to commence in the first place. With the official annual audit under way, your scribe has just been informed that the gasoline account shows a variance of but eight hundred gallons, and that the auditor can hardly believe his own figures. For your information, roughly 800,000 gallons have been used this past year, and that good old two percent won't have to be taxed after all."

APPOINTMENT OF ADDITIONAL FLYING CADETS

Since the announcement in the previous issue of the News Letter of the selection of 164 students for appointment as Flying Cadets to begin training with the July 1st class at the Primary Flying School at Randolph Field, Texas, 21 additional candidates received Flying Cadet appointments, and were assigned to this class. Altogether, a total of 203 men were selected for the July 1st class, of which 27 have, for various reasons, declined appointment.

Among the 164 students listed in the July 1st issue of the News Letter, six declined appointment, viz:

Civilian Candidates

Speer, William Arthur	Birmingham, Ala.
Ott, William Dunnica	Osyka, Miss.
Marshall, Richard Skip	Newark, N.J.
Alberi, Americo	Mt. Vernon, N.Y.
Taylor, Ozburn Early	Nashville, Tenn.
Dunn, Frank Lowry	San Antonio, Texas

Deducting the above named six students and adding the 21 new candidates, as above mentioned, makes the student body of the July 1st Class total 179.

These 21 candidates are made up of seven Reserve officers of various branches of the service who were on active duty, 13 civilian candidates, and one enlisted man from the Infantry. They are listed below, as follows:

Reserve Officers (2nd Lieutenants)

Jones, David Mudgett (Cav.)	Phoenix, Ariz.
Yancey, William Rufus (Inf.)	Fayetteville, Ark.
Wall, Frederick (Inf.)	Los Angeles, Calif.
Shoemaker, Francis D. (Inf.)	Bethesda, Md.
Northcutt, Robert E. (Inf.)	Cement, Okla.
McCaskill, Tillman (Inf.)	Idabel, Okla.
Fulbright, Thomas F. (F.A.)	Texarkana, Texas

Enlisted Man (Private)

Bryans, Francis Alford	Jamaica Plains, N.Y.

Hqrs. Co., 5th Infantry, Ft. Williams, Me.

Civilian Candidates

Marett, Samuel H.	Little Rock, Ark.
White, Herbert G.	Long Beach, Calif.
Hart, William A.	Washington, D.C.
Loveless, John Relmond	Washington, D.C.
Fagan, Joseph William, Jr.	Chicago, Ill.
Woolams, Jack	Chicago, Ill.
Boyer, Lowell Wilson	Mt. Vernon, Iowa
Bagby, Robert Clyde	Fishburg, Ky.
Hood, Edward Earl	New Bloomfield, Pa.
Fulghum, Harold	Terrell, Texas
Gilbert, Huntington Kerr	Dorset, Vt.
Nelson, Fred A., Jr.	Arlington, Va.
Payne, Irvin Lloyd	Bradshaw, W. Va.

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The report covering the recent activities of the 33rd Pursuit Squadron was a little delayed and hence was not included with the activities of the other squadrons of the 8th Pursuit Group published elsewhere in this issue. The Correspondent of the 33rd states that ground gunnery, aerial gunnery, instrument flying, training and qualification of rear seat gunners, plenty of sunshine and swimming was the daily schedule for the squadron during the two weeks' stay at Virginia Beach. He adds that Virginia Beach is an ideal gunnery camp and several trips a year would suit all concerned very much.

COMMISSIONS FOR FLYING CADETS

The following-named Flying Cadets of the Air Corps, who graduated from the Advanced Flying School, Kelly Field, Texas, on February 17, 1937, and who since that time were on active duty under their Cadet status with Air Corps tactical organizations at various fields, were commissioned second lieutenants in the Air Reserve on June 20, 1937, and placed on extended active duty as Reserve officers at the stations indicated, viz:

BOMBARDMENT PILOTS

Langley Field, Va.:

Cochran, Philip G.	Erie, Pa.
Hillery, Edward G.	Boonton, N.J.
MacDonald, Donald W.	San Francisco, Calif.
McNown, William K.	Lawrence, Kans.
Myers, Thornton K.	Lafayette, Ind.
Perry, Norris	Sedro-Woolley, Wash.
Tate, David A.	Asheville, N.C.
Watson, Harold E.	West Hartford, Conn.
Young, Earl B.	Sidney, Nebr.

Barksdale Field, La.:

Snavely, Eugene H.	Harlingen, Texas

Selfridge Field, Mich.:

Bleyer, Julian M.	Tulsa, Okla.
Dalton, Lloyd H., Jr.	Ottawa, Kans.
Margrave, Thomas E.	Gordon, Nebr.
Phelps, James W., Jr.	Berwyn, Pa.
Schoch, Jack L.	New Ulm, Minn.
Theobald, Robert A.	Portland, Ore.
Triffy, Sam P.	Detroit, Mich.

ATTACK PILOTS

Barksdale Field, La.:

DuBose, James R., Jr.	Aiken, S.C.
Eubank, William E., Jr.	Bluefield, W. Va.
Helton, Elbert	Clifton, Texas

March Field, Calif.:

Box, Clyde	Denton, Texas
Nau, Wallace E.	Pasadena, Calif.

OBSERVATION PILOTS

Harvey, Sterling G.	Bloomsburg, Pa.
Hoffeditz, Aaron H.	Greencastle, Pa.

(Assigned to Brooks Field, Texas).

PURSUIT PILOTS

Langley Field, Va.:

Brogger, Jacob J.	Butterfield, Minn.
Hunker, Joseph F.	San Diego, Calif.
Zemke, Hubert	Missoula, Mont.

March Field, Calif.:

Dillingham, Walter H.	Honolulu, Hawaii

Selfridge Field, Mich.:

Patterson, Steele R.	Seneca, S.C.
Thorne, Henry G., Jr.	Fort McPherson, Ga.

Note: In the case of the two Observation pilots, Lieuts. Harvey and Hoffeditz, stationed at Brooks Field, Texas, Special Orders of the War Department, recently issued, assigns the first named officer to duty at Mitchel Field, N.Y., July 21, 1937, and the last named officer to Post Field, Fort Sill, Okla., effective July 10, 1937.

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Second Lieut. Willard Wright Lazarus, Air Reserve, was appointed a second lieutenant in the Air Corps, Regular Army, with rank from July 3, 1937. He is relieved from his present assignment and duty at Brooks Field, Texas, and assigned to duty at Moffett Field, Calif.

SHINE, MISTER?

Among the many interesting articles in the July issue of "National Aeronautics," the official organ of the National Aeronautic Association, Washington, D.C., is one under the above caption, wherein the great importance of aircraft having a highly polished wing surface is proven by facts and figures.

The editor of "National Aeronautics," that enterprising and highly interesting aviation magazine, which seems to be growing better and better with each succeeding issue - if that is possible - has given the News Letter permission to reprint the above mentioned article, so here goes:

The year is 1940. You are reclining luxuriously in the lounge chair of a 1940 Skyliner as it taxies smoothly toward the center of the airport. There the plane rolls onto a turntable where, with speed and efficiency, attendants make certain adjustments. Slowly the turntable swings the big ship into the wind. . . then a not unpleasant surge forward and after an amazingly brief run for such a huge plane you are in the air . . . aided by catapult launching 1940 style.

Fantastic . . . not at all, per no less an authority than the N.A.C.A.

Thus Dr. George W. Lewis, Director of Research of the N.A.C.A. is speaking: "Airplanes are increasing in size and wing loading, and one of the important problems confronting both airplane designers and airplane operators is that of providing a reasonably short take-off distance for modern and future airplanes. The take-off distance required for some of our current airplanes in fact taxes many of our commercial airports. With definite trends toward larger air transports, with higher wing loadings and corresponding increase in take-off distance, the problem has reached a critical stage.

For an airplane of the future with a wing loading of 35 pounds per square foot and a power loading of 10 pounds per horse power, at a speed of 250 miles per hour without flaps and without a controllable pitch propeller, a distance of 4000 feet would be necessary for take-off. Even with a constant speed propeller and a good flap or high lift device, the take-off distance is still excessive."

So . . . N.A.C.A. researchers have been busy investigating catapulting devices for use at large airports. They report that with a catapult producing an acceleration of $\frac{1}{2}$ g., which is held not excessive for passenger comfort, the take-off distance of our large airliners of the near future can be reduced to a reasonable figure.

And they are not theorizing either. They report that with an airplane of the size of the new DC-4 with a high wing loading of 30 pounds per square foot and a weight of 30 tons, to take-off in a distance of 1150 feet the catapult must provide a thrust of 15,000 pounds. Obtained directly, this would require a catapult motor of 3,250 horse power which would be quite a motor to say the least. But N.A.C.A. engineers provide the practical solution of storing energy in a flywheel. Ergo . . . allowing five minutes to bring the flywheel up to speed, the 15,000 pound thrust is obtained with an electric motor of relatively low horsepower and cost.

But to get back to our 1940 sky excursion . . . the few minutes our airliner was on the passenger loading ramp for that particular stop, a crew of polishers were busily at work on the wings. And with system and dispatch the already shining and mirror smooth wing surfaces were brought to a super sheen.

Reason . . . N.A.C.A. researches report that with modern streamlining and retractable gear 50% of the drag of the complete airplane is caused by the wing. But the modern airplane wing is covered with sheets of aluminum alloy riveted to the main wing structure. Tests show that with a 20,000 pound transport having a wing area of 1000 square feet and flying at 225 miles per hour, the added resistance of present day conventional rivets and lapped joints necessitates the expenditure of 182 horse power over what would be required if the wing were smooth.

Even the addition of paint to a smooth metal surface, it was found, required 91 horse power more. Thus N.A.C.A.ers logically deduce that a smooth, highly polished wing surface is of such importance in high performance modern aircraft that it may be found economical to have service crews wipe off the accumulated dirt and dust on wing surfaces at every stop!

Pulling Out the Rabbits

The above cites but two of the many scientifically bewhiskered white rabbits the impressarios of N.A.C.A. Aircraft Engineering Research Staff are pulling out of the commodious N.A.C.A. hat.

Today's preview of tomorrow's flying is a pat and honest label of what N.A.C.A. has to exhibit. And if you doubt for a moment that they are not producing plenty of white rabbits listen to this list which, believe it or not, names but a few.

The New N.A.C.A. Two Control Nose Slot Cowling for Radial Air Cooled Engine.

The N.A.C.A. Trim Angle Indicator for Large Seaplanes.

Elimination of Shimmy in the forward wheel of a tricycle type landing gear.

The New Free Flight Wind Tunnel for the study of balance, stability, riding and control characteristics of an airplane model in free flight.

The Ultra High Speed "Shock" Wave and when it occurs.

The Effect of Wing Plan Form and Airfoil Section on recovery from a spin.

The New N.A.C.A. Gust Tunnel for the study of the motion that is assumed by the airplane in passing through a gust, the acceleration imposed and the flight path taken.

The new Stall Control Flap.

The nose slot cowling was born from the problem of cowling and cooling the modern radial air cooled engine. In recent years the horse power output of radial engines has increased from 400 to 1500 horse power. With high compression ratios and 100 octane fuel, a limiting factor in the power that can be obtained is the ability of the cylinder and cylinder head to dissipate heat.

The standard fixed N.A.C.A. Cowling has the disadvantage of providing an excess of cooling at high speed and insufficient cooling at low speed. With the new two position nose slot cowling, the pilot can set the nose slot for satisfactory cooling for take-off and climb. When the climb has been completed, by pushing a lever the pilot can shift to the high speed or cruising range where the aerodynamic efficiency of the cowling is greatly increased.

With the spanning of the Pacific and the proposed spanning of the Atlantic by air, the development of large seaplanes has assumed an important place in our transport system. Some of the large seaplanes now being constructed are equipped with four engines having a total of approximately 6,000 horse power. This power is required by the take-off, characteristics of the seaplane, since for cruising only approximately one-half or 3,000 horsepower is used.

Scanning the Trim Angle

N.A.C.A. tests have shown that the trim angle . . . the angle that the boat hull assumes with the horizon . . . has important influence on the time necessary for take-off. By using the best trim angle for the particular design of hull, take-off time is materially reduced.

Outcome . . . the N.A.C.A. trim angle indicator. The pilot has before him a small glass in which is reflected the horizon. This glass is graduated in degrees, so that if the optimum trim angle for take-off happens to be 4 degrees, the pilot can accurately trim the hull so that the horizon line is on the 4 degree graduation line of the instrument. As simple as that.

WEATHER SQUADRON AT BOLLING FIELD

Effective July 1st, the Air Corps acquired a new department in its list of activities, and took another step toward a more complete and modern organization. The department consists of the newly formed Weather Squadrons, whose duties were previously performed by the Meteorological Department of the Signal Corps. The personnel of the new Weather Squadrons is madd up chiefly of the trained and experienced men of the old Meteorological Departments, so the weather services continue as smoothly as ever.

At Bolling Field, six men from the Signal Corps Meteorological Department were transferred to the 2nd Weather Squadron, the headquarters of which are at Langley Field, Va. These men are attached to Base Headquarters and 14th Air Base Squadron for administrative purposes. This detachment will be supplemented by additional men from the Air Corps, forming an efficient weather department.

The Signal Corps men in the Weather Detachment at Bolling Field have been well trained by the conscientious efforts of Captain William H. Wenstrom, Signal Corps, who has been at this station since the summer of 1934, and who has contributed much toward the improvement of weather service for the Army Air Corps by constant experiments and the gathering of important data. Captain Wenstrom will retire from the service, effective July 31, 1937, with the rank of Major, Signal Corps, and spend his time in civil life writing and teaching. The loss of his services will be keenly felt, not only by the Signal Corps, but also by the new Weather Squadrons.

The duties of Meteorological Officer at Bolling Field have been taken over by 1st Lieut. Floyd B. Wood, Air Corps. He has been assigned to this station after completing a course of instruction at the Massachusetts Institute of Technology, Cambridge, Mass., and the Weather Department will be under his watchful supervision.

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BOMBING TRAINING BY 20TH SQUADRON

The month of June was devoted to intensive bombing training by the 20th Bombardment Squadron, Langley Field, Va. The bombing day, starting at 5:00 a.m. with the take-off of the first mission, continued at the rate of one mission of two bombing teams every two hours throughout the daylight period. Both Y1B-17 and B-10B type airplanes have been used on these missions. The results of this pressure training have been gratifying.

AIR MECHANICS TALK SHOP

The other day a visitor to March Field was seen entering a hangar, where some aerial repair work was under way. He emerged a few minutes later with a red face and a hopeless expression in his eyes. Stammered: "Good grief! What's the matter with those fellows in there? I listened to their talk for five minutes and still don't know what it is all about - they must be nuts."

According to the March Field Correspondent, here is what the visitor heard: (Translation follows each sentence).

1st Mechanic: "I hear the 19th got two B-10's for overhaul."

(I hear the 19th Bombardment Group has two Martin Bombers for overhaul.)

2nd Mechanic: "Yeah, some shave-tail belly-flopped and washed out the gears, I suppose? But even so, better than those darned OA-4's, our good old ducks."

(Yeah, some 2nd Lieutenant belly-flopped - landing a ship on the belly for various reasons, bad landing - and damaged the landing gears, I suppose? But even so, better than those darned Douglas Amphibians, our good old ducks. 'Ducks" general term for Amphibians used in the Army).

1st Mechanic: "Ever switched props on the old C-14 or C-4A? No? You're lucky. Them fins' something awkward to mess around with, even worse than the C-8A's."

(Ever exchanged propellers on the old Fokker or tri-motored Ford planes? No? You are lucky. Those ships are something awkward to mess around with - to handle - even worse than the Fairchilds.)

2nd Mechanic: "The top-kick whispered something about some Y1B-17's for us, them and the B-18's now on their way - oh, boy, will we sweat! Hey, get a load of that C-27 side-slipping in! Boy, they sure handle like a PB-2A."

(The 1st Sergeant said something about some Boeing Flying Fortresses for March Field. Those and the new Douglas bombers on their way. Oh, boy, what work that will be. Hey, look at that Bellanca gliding in sideways with the wind! They sure handle like a Consolidated Pursuit plane.)

The visitor intervened here: "Errh, ahh, pardon me, but what are those silver ships over there?" (meaning a Northrop plane).

1st and 2nd Mechanics: "Oh, those? Them's our new A-17A's. You know, same as the A-17's, only retractable gears, a few more hp's and rpm's. But, Mister, have a peep at those babies out there - P-26's - what d'ya think of them? Grease-monkeys' delight they are - ain't they?"

(Oh, those? Those are our new Northrop attack planes. You know, the same as the last model Northrops, only retractable wheel units, more horsepower and revolutions per minute - speed and power. But, Mister, have a look at those babies out there - Boeing pursuits - what do you think of them - the delight of any mechanic - aren't they?)

Visitor: "Errh, why do you always quote letters and numbers? And what do they mean?"

Mechanics: "Oh, the letters? Well, you've seen commercial planes carry letters on their wings, haven't you? NC, for instance, stands for NATIONAL COMMERCIAL: N just for NATIONAL, etc. In the Air Corps, A stands for ATTACK; B for BOMBER; C for TRANSPORT; P for PURSUIT; O for OBSERVATION; OA for OBSERVATION AMPHIBIAN; BT for BASIC TRAINER, etc. Get it now?"

Visitor: "Hmmmm - - !"

Other mechanic: "Me, Mister, I take the C-33 for good old joy riding, or mebbe the old man's new C-36, swell job that too. I sweated a hop the other night in a BT-2 and nearly left the upholstery behind when we hedge-hopped in that old crate. But then, of course, the C-24's, O-46A's, B-6's, B-12's or even TC-13 - hahaha - ain't.....ehh, what's the matter, Mister, you aren't going already, Mister....hey!"

(I, Mister, take the Douglas transport for a nice trip on the controls, or maybe the Commander's new Lockheed, swell job that, too. I managed to go along for a short flight the other night and nearly fell out when we did some ground strafing in that old plane. But then, of course, the Fairchilds, Douglas Observations, Douglas or Martin bombers or even the Army Air Corps blimp - hahaha - are not...)

And here is where the visitor said: "They must be nuts!"

P.S. We agree.

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COLONEL HARMON LEAVES MARCH FIELD

Lieut. Colonel Hubert R. Harmon, Air Corps, accompanied by Mrs. Harmon, left March Field on July 5th for his new duties at the Army War College, Washington, D.C.

Colonel Harmon, a native of Chester, Pa., and his wife came to March Field on July 12, 1935. From then until August 17, 1936, he was connected with the 1st Wing, GHQ Air Force, and later became Commanding Officer of the 19th Bombardment Group, March Field. Colonel Harmon, a graduate of the U.S. Military Academy, the Air Corps Engineering School, the Air Corps Tactical School and the Command and General Staff School, has done much during his stay at March Field to further the aims of military aviation and impressed all with his fine military and personal abilities. March Field extends its best wishes for his future welfare.

BIOGRAPHIES

LIEUT. COLONEL LLOYD N. KEESLING

Lieut. Colonel Lloyd N. Keesling, Air Corps, who graduated from the Air Corps Tactical School, Maxwell Field, Ala., on June 1, 1937, and is now under orders for duty at Chanute Field, Ill., upon the expiration of leave, was born at Cedar Springs, Va., September 3, 1889.

After attending elementary schools and high school for 12 years, and the Emory and Henry College, Emory, Va., for two years, he graduated in 1912 from the Virginia Polytechnic Institute, Blacksburg, Va., and then took a post graduate course for a year, receiving the degree of Electrical Engineer.

Commissioned a provisional second lieutenant of Infantry, November 30, 1916, he was assigned to the 39th Infantry, and during the War was stationed at Camp Greene, Charlotte, N.C.

Detailed to the Aviation Section, Signal Corps, Colonel Keesling graduated from the School of Military Aeronautics, Austin, Texas, March 23, 1918, whereupon he was ordered to Kelly Field, San Antonio, Texas, for flying training, which he completed in August, 1918. He was then ordered to duty in Washington, D.C., in the Training Section, Office of the Director of Military Aeronautics. He was rated as Reserve Military Aviator from July 18, 1918, and re-rated as Airplane Pilot, October 16, 1919. While assigned to the Training Section, he served as Assistant Executive Officer from March, 1919, to April, 1919, and as Assistant to the Assistant Chief of that Division, also as Assistant to the Chief, Training Division, until April 27, 1921. During October, 1919, he participated in the New York to San Francisco Reliability and Endurance Flight Contest. On various occasions he served as Acting Chief of the Training Division.

Transferred to foreign service, Col. Keesling was assigned to duty as Commanding Officer of Clark Field, Pampanga, P.I., and served as such until September 2, 1921. After duty as Adjutant and Personnel Adjutant, Clark Field, to October 9, 1921, he assumed command of the 3rd Pursuit Squadron, Clark Field, and performed this duty until January 3, 1922, when he was assigned as Supply Officer of this Squadron. In September, 1922, he became Provisional Flight Company Commander, in addition to which he performed various other duties, including those of Commanding Officer of Clark Field and the 3rd Pursuit Squadron, until May 17, 1923. He was then assigned to the command of the 28th Bombardment Squadron until the expiration of his tour of foreign service.

Assigned to duty at Mitchel Field, L.I., New York, Colonel Keesling served as Adjutant of the Post and of the 9th Observation Group, in addition to various other duties, including temporary commanding officer, until December 10, 1924. From that date until June, 1926, he performed the duties of Personnel Adjutant and Recruiting Officer.

After a long period of illness which necessitated hospitalization, Colonel Keesling, in July, 1927, was assigned to duty at March Field, Riverside, Calif., where he assumed command of the 53rd School Squadron, in addition to performing other duties. On May 15, 1929, he was assigned to the 13th School Group as Post Engineer Officer. At various times he assumed temporary command of the post. On August 20, 1930, he was transferred to the 70th Service Squadron, and he commanded this organization until April, 1931, when he was assigned to the 1st Bombardment Wing Headquarters, serving at different periods as Post Engineering Officer and as Post Operations Officer. He was appointed Post Executive Officer, November 14, 1932, and served as such until May 29, 1933. For a number of months thereafter he served as Executive Officer of the March Field District, Civilian Conservation Corps.

From June 1, 1934, to August 19, 1936, Colonel Keesling was stationed at Randolph Field, Texas, serving as Assistant Commandant and later as Assistan Executive Officer of the Primary Flying School. He reported for duty as student at the Air Corps Tactical School, Maxwell Field, Ala., August 21, 1936, and, as before stated, graduated from this school on June 1, 1937.

Colonel Keesling received his promotion to 1st Lieutenant, November 30, 1916; to Captain (temp.) August 5,1917; to Captain, September 18, 1917; to Major, March 11, 1929, and to Lieut. Colonel (temp.) March 16, 1935.

LIEUT. COLONEL VINCENT B. DIXON

Lieut. Colonel Vincent B. Dixon, Air Corps, now on duty in the Office of the Chief of the Air Corps, Washington, D.C., as Assistant Executive, was born on November 12, 1894, at Rip Raps, Va.

Following his graduation from the Virginia Polytechnic Institute, Blacksburg, Virginia, in 1916, he received an appointment on November 30th of that year as a 2nd Lieutenant, Coast Artillery Corps, U.S. Army. He served with this branch of the Army to July 1, 1920, his duties for the most part being those of company commander. He graduated in 1918 from the Coast Artillery School, Fort Monroe, Va.

While on duty in the Panama Canal Zone Colonel Dixon was detailed to the Air Service for flying training, and upon completing the course of instruction at the Air Corps Primary Flying School at Carlstrom Field, Arcadia, Fla., in March, 1921, he was transferred to Kelly Field, Texas, for training as a Pursuit pilot. In July, 1921, he was transferred to Ellington Field, Houston, Texas. Upon the completion of his advanced training he was rated as Airplane Pilot, effective August 10, 1921.

Colonel Dixon remained at Ellington Field, serving as Post Adjutant and Personnel Adjutant until November 23, 1921; as Commanding Officer of Air Park No. 2 and Transportation Officer, 1st Pursuit Group, until January, 1923. He moved to Selfridge Field, Mich., in June, 1922, when the activities at Ellington Field were transferred to that northern station. From January, 1923, to August, 1924, he commanded the 57th Service Squadron, in addition to performing various other duties.

Transferred to McCook Field, Dayton, Ohio, Colonel Dixon completed the course of instruction at the Engineering School at that station on August 15, 1925. He remained on duty at McCook Field until November 30, 1925, when he returned to Selfridge Field and again assumed command of the 57th Service Squadron. From February 4th to June 25, 1926, he was in temporary command of Selfridge Field and the 1st Pursuit Group.

From August 18, 1928, to June, 1929, Colonel Dixon was on duty as a student at the Air Corps Tactical School, Langley Field, Va., and thereafter he was assigned to duty at the Tactical School until August, 1930, when he was assigned as student at the Command and General Staff School, Fort Leavenworth, Kansas. Following the completion of the two year course at this school, he served for nearly two months with the 2nd Bombardment Group at Langley Field, and was then transferred to duty in the Hawaiian Department, assuming command of Luke Field and of the 5th Composite Group on September 23, 1932. He continued on this assignment until October 26, 1934.

On January 8, 1935, Colonel Dixon reported for duty in the Office of the Chief of the Air Corps, Washington, D.C., and was assigned to the Executive Division as Assistant Executive.

Colonel Dixon received his promotion to 1st Lieut., November 30, 1916; to Captain, August 1, 1919; to Major, January 22, 1929, and to Lieut. Colonel (temp.) June 22, 1936.

MARCH FIELD ACTIVITIES

Bringing to a close a very successful training year under the inspiring leadership of Lieut. Colonel Hubert R. Harmon, the 19th Bombardment Group qualified twelve expert aerial bombers during June. Of these, six were members of the 30th Squadron and six of the 32nd Squadron. The best score was made by Lieut. A.T. Wilson, of the 30th Squadron.

"These qualifications," remarks the News Letter Correspondent, "considered together with the qualification of 24 officers and 33 enlisted men as expert aerial gunners, mark a definite turning point in the history and progress of this group. We have now completed our transition from a school group to a tactical group. We are proud of our accomplishments in the fields of dead reckoning and celestial navigation as a school group; we are proud of our adjustment and change from a school group to a tactical group; and we are confident that under Lieut. Colonel Harvey B. Burwell, our new Commanding Officer, assisted by a newly organized staff, including Majors John K. Cannon, Walter R. Peck, and Harry A. Halverson, we shall set a high mark as an M-day unit.

The 38th Reconnaissance Squadron, commanded by Major William S. Gravely and attached to this Group, is nearing its first birthday. Despite numerous changes in personnel and equipment, this squadron qualified two officers and four enlisted men as expert aerial gunners, in addition to performing routine missions of navigation, search, patrol and photography.

Though we are pleased with our progress, we are not content with our achievements, and during the new training year shall attempt to increase our efficiency so as to attain a complete preparedness for any emergency."

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METEOROLOGICAL STATION FOR KELLY FIELD

The meteorological station formerly located at Fort Sam Houston, Texas, has been transferred to Kelly Field. A new office and laboratory has been constructed, adjoining the Post Operations Office, for this vitally important activity.

Lieut. Elmo Mathews, who is in charge of the station, has been associated with Dr. Robert Millikan, internationally famous scientist in cosmic ray experiments. Lieut. Mathews recently completed a one-year course in meteorology at the California Institute of Technology.

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MERRILL AND LAMBIE VISIT SAN ANTONIO

Dick Merrill and Jack Lambie, famous round-trip trans-Atlantic flyers, visited San Antonio, Texas, on June 22nd, remaining at Stinson Field from 10:30 a.m. to noon. Among the senior officers of the posts in the vicinity of San Antonio who greeted the visiting pilots was Colonel Arnold N. Krogstad, Commandant of the Air Corps Advanced Flying School, Kelly Field. Colonel Krogstad made a few remarks over the public address system installed and used for the occasion.

Jack Lambie, junior member of the distinguished team, was a student flyer at Randolph and Kelly Fields, being graduated from the Air Corps Advanced Flying School in October, 1933.

Both Merrill and Lambie now fly for the Eastern Air Lines.

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AIR INFLATED CHAIR FOR SOLID COMFORT

Out at Wright Field, Dayton, Ohio, a new type of chair has created considerable interest. Mr. F.G. Manson, of the Equipment Branch of the Materiel Division, is the inventor of what appears at first glance to be a grandfather's arm chair covered with cretonne, of conventional structure and appearance. In reality, however, this piece of furniture is constructed of rubberized fabric. Inflated with air it is strong enough to support the weight of the stoutest tired man, although its own weight is but six pounds. Upon the removal of a small cap, the chair can be completely deflated, packed in a small bag, and tucked under the arm for removal to any spot desired.

Not merely a novelty, this type of chair, in the opinion of the Materiel Division Correspondent, may have practical application in commercial transport airplanes where it would act as a shock absorber in case of forced landings, and in crashes would not prove a source of injury to passengers. In a landing on water, a number of these chairs contained in an airplane would be sufficient to keep the airplane afloat for an indefinite period of time.

The chair may also prove of interest to owners of trailers. Patents have been obtained by Mr. Manson upon his invention. However, rights have been extended for its manufacture in the commercial field. But recently received, the rubberized fabric chair has been an object of interest to Materiel Division personnel and to visitors.

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MAJOR VANAMAN VISITS WRIGHT FIELD

Major A.W. Vanaman, a recent graduate of the Army War College, arrived at the Materiel Division, Wright Field, Ohio, on June 25th, to obtain certain technical information and data in preparation for his new assignment as Assistant Military Attache for Air in Berlin, Germany. He remained at the Division until June 28th.

Major Vanaman is a graduate of the Air Corps Engineering School of the class of 1930.

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PRIMARY STUDENTS BEGIN ADVANCEDTRAINING

Class 29-B at the Air Corps Advanced Flying School, Kelly Field, Texas, began flying and ground school work on Thursday, July 1, 1937. Of the 92 students in the present class which completed the course at the Primary Flying School, Randolph Field, just recently, 40 are student officers and 52 are flying cadets.

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PLENTY OF SPLASHING NOW AT MITCHEL FIELD

A new and modern swimming pool, located at the Officers' Club, Mitchel Field, N.Y., was formally opened to officers, their families and guests, on the evening of June 17th by Colonel Walter H. Frank, Air Base Commander, Mitchel Field, assisted by Lieut. Colonel Thomas F. Hanley, who acted as Master of Ceremonies. The speakers were Colonel Walter H. Frank; Major John N. Douglas, Base Quartermaster, and Captain Ralph G. Richards, Construction Quartermaster.

Colonel Frank paid high tribute to the cooperation, planning and execution of the work by Major Douglas and Captain Richards in the construction of the pool, and commended highly the work of the local C.C.C. Company and the personnel of the Works Progress Administration for their untiring efforts in finishing the construction in the shortest possible of time.

An added attraction on this occasion was an excellent exhibition of aquatic skill by a group of expert swimmers and divers from Jones Beach, who gave a gay and entertaining touch to the affair. The first official splash by a bonafide resident of Mitchel Field was made in the chilly H2O by Cadet Crandall, a member of the crack West Point Swimming Team, son of Major Walter M. Crandall, Air Base Surgeon, Mitchel Field.

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On June 26th, four Y1B-17 type airplanes, under the command of Lieut. Col. Robert Olds, commander of the 2nd Bomb. Group, Langley Field, Va., made a mass flight to Miami, Fla. The return flight to Langley Field was made in five hours.

THE FLOWER SHOW AT LANGLEY FIELD

By Mrs. Walter Lloyd Bender

The Flower Show, held under the auspices of the Woman's Club of Langley Field, was well attended by visitors from Norfolk and the lower Peninsula. There were many displays of outstanding and unusual beauty.

The luncheon was attended by about a hundred guests. Mrs. Frank M. Andrews gave a welcoming address. Mrs. Walter Lloyd Bender, the Executive Chairman, gave an informal talk on the objectives of the Woman's Club and outlined the activities for the coming year. She emphasized the beauty of the crepe myrtle, the post flower. Three hundred of these bushes has already been planted, and it has been planned to plant about one thousand more in the fall. She drew an imaginary picture of Langley Field twenty years hence, when the daughters of the Garden Club members would walk through rows of beautiful myrtle trees that their mothers had been instrumental in planting. Her talk was followed by reports from the various chairmen of sections, as follows:

President:
Mrs. F.M. Andrews
Vice Presidents:
Mrs. G.C. Brant
Mrs. W.R. Weaver
Secretary:
Mrs. R.L. Maxwell
Treasurer:
Mrs. S.G. McLennan
Executive Chairman:
Mrs. W.L. Bender
Dramatics:
Mrs. C. Spatz
Garden:
Mrs. W.L. Bender
Music:
Mrs. H.C.K. Muhlenberg

Art:
Mrs. C.V. Haynes
Books:
Mrs. R.L. Maxwell
Home Economics:
Mrs. J.B. Stanley
Bridge:
Mrs. March
Athletics:
Mrs. Robert Olds
Golf:
Mrs. E.E. Glenn
Swimming:
Mrs. W.J. Calvert
Tennis:
Mrs. W.C. Bentley

After the luncheon the guests were delightfully entertained by the Sub-Debs, with Miss Truth Cornelia Bender, who is the organizer and sponsor, and the following:

Edith Davies
Beckey Spatz
Jean Craig
Betsy Davies
Patsy Carey
Eileen Carter
Mary LeBrou

Judy Carey
Ann McDuffie
Dorothy Salisbury
Margaret Whitehead
Mary Cecile Wynn
Jeanne Andrews
Jackie McDuffie

They gave two very beautiful tableaus in the club lounge - The Old Spinning Wheel in the Corner, in which the young ladies wore original costumes of their grandmothers' days, and Little Old Lady, which was sung by Miss Joan Trunk and the chorus. Joan was dressed in lavender lace and was a charming little old lady.

There were about four hundred exhibits. The judges were Mrs. W.L. Weller, of Norfolk; Mrs. Crosby, Norfolk Federation of Garden Clubs; Mrs. Parks, Hampton Roads Garden Club, and Mrs. Page, Willoughby Spit. The flowers were outstanding for their arrangement and quality. The awards were as follows:

Blue Containers - Comp. Colors
1. Mrs. Bowen; 2. Mrs. Gibbs; 3. Mrs. Glantzberg

Miniatures
1. Mrs. Alan Jones, 2. Mrs. Maxwell, 3. Mrs. Knerr.

Formal Dinners
1. Mrs. Trunk, 2. Mrs. Calvert, 3. Mrs. Hale.

Breakfast Trays
1. Mrs. Buxton, 2. Miss Bender, 3. Mrs. Gibbs.

Arr. in Pitchers
1. Mrs. Alan Jones, 2. Mrs. McLennan, 3. Mrs. Carey.

Wild Flowers
1. Mrs. Carey, 2. Mrs. Skinner, 3. Mrs. Knerr.

Arr. under 10 inches
1. Mrs. C.S. Diggs, 2. Mrs. McLennan, 3. Mrs. Geo. Parker.

Bubble Bouquets
1. Mrs. Trunk, 2. Mrs. Kilpatrick

Informal Lunch Tables
1. Mrs. Gibbs, 2. Mrs. Calvert, 3. Mrs. Milpatrick.

Arr. of Petunias
1. Mrs. Carey, 2. Mrs. McLennan, 3. Mrs. Skinner

Snaps
1. Mrs. Salisbury

Rose
1. Mrs. Carey, 2. Mrs. Griffin.

Miscellaneous
1. Mrs. Bender, 2. Mrs. Muhlenberg, 3. Mrs. Powers.

All White
1. Mrs. McLennan, 2. Mrs. Heard, 3. Mrs. Alan Jones.

Men's Arr.
1. Col. Bender, 2. Major Steele, 3. Major Trunk.
1. Hon. Mention - Major Hutchison.
2. Hon. Mention - Col. Calvert.

Pairs.
1. Mrs. Carey, 2. Mrs. Trunk, 3. Mrs. Odom.

Japanese Manner
1. Mrs. Carey, 2. Mrs. McLennan, 3. Mrs. Bender.

Pastels in Silver
1. Mrs. Andrews, 2. Mrs. Muhlenberg, 3. Mrx. Maxwell.

Spec. Gladiolas
1. Mrs. Hale, 2. Mrs. Trunk, 3. Mrs. Griffin.

Spec. Zinnias
1. Mrs. Blackiston, 2. Mrs. Craig, 3. Mrs. Griffin.

Sweepstakes
First Prize: Mrs. Edwin F. Carey.
Second Prize: Mrs. Otto Trunk.
Third Prize: Mrs. Stewart G. McLennan.

Most distinctive Exhibit in the Show
Mrs. Carey - (Wild Onion Bloom)

Special Award
Mrs. Hale (For nose-gays in finger bowls).

The activities of the Woman's Club will be resumed in September, but a number of the sections will continue their activities through the summer.

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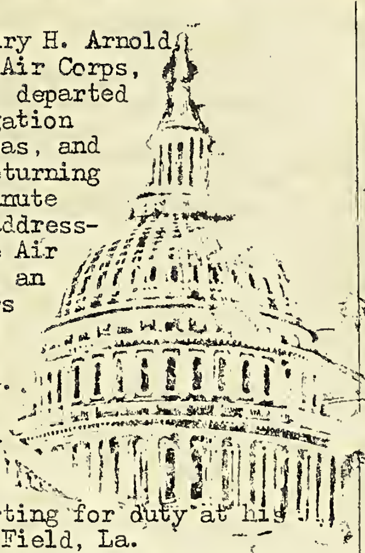
Second Lieuts. John Thomas Cox, Dallas, Tex., and James Edwin Roberts, Pettus, Texas, both of the Air Reserve, have been placed on extended active duty at Barksdale Field, La., for a period of three years from July 15, 1937.

NOTES FROM THE WASHINGTON OFFICE



Brigadier General Henry H. Arnold, Assistant Chief of the Air Corps, and Captain L.S. Smith, departed on June 28th on a navigation flight to Wichita, Kansas, and Chanute Field, Ill., returning July 2nd. While at Chanute Field, General Arnold addressed the graduates of the Air Corps Technical School, an account of which appears elsewhere in this issue of the News Letter.

Lieut. Colonel Ross G. Hoyt, who had been on duty in the Information Division, departed on June 28th on leave of absence, prior to reporting for duty at his new station, Barksdale Field, La.

Officers who recently reported for duty in the Chief's Office were Lieut. R.M. Losey on June 28th; Lieut. Colonel W.E. Farthing on July 1st; Major Ira C. Eaker on June 30th; and Captain David G. Lingle on July 6th.

Officers returning from leaves of absence were Majors L.W. Miller and C.P. Prime on June 30th; Colonel Wm. C. McChord on July 5th; Lieut. Colonel L.B. Jacobs on July 2nd; Major A.E. Easterbrook on July 7th; Captain L.S. Smith on July 5th; Captain C.C. Cluck on July 8th; and Lieut. Colonel H.W. Flickinger on July 15th.

Officers departing on leaves of absence were: Lieut. Colonel H.C. Davidson and Major M.H. McKinnon on July 6th; Lieut. Colonel H.H. Young on July 7th; Captain James B. Jordan on July 8th; Lieut. Colonel M.F. Davis on July 9th; Captain A.H. Foster on July 12th, returning on the 15th; Major R.C.W. Blessley on July 14th; Lieut. Colonel V.B. Dixon and Major Robert Kauch on July 15th.

Major N.D. Brophy departed June 30th for temporary duty at Wright Field, Ohio.

Lieut. Colonel Ralph P. Cousins reported June 30th for temporary duty.

Colonel Chalmers G. Hall departed July 5th on detached service.

Major E.V. Harbeck returned July 1st from detached service.

Major Lowell H. Smith departed July 5th for detached service at Wright Field, Ohio, returning July 11th.

Navigation flights were made by the following-named officers: Major C.Y. Banfill, July 3rd, to Randolph Field, Texas, returning July 6th; Lieut. R.M. Losey to Langley Field, Va., and return, July 8th; Major W.B. Souza to Mitchel Field, N.Y., July 10th, returning the following day; Major Alvan C. Kincaid to Clearwater, Fla., July 10th.

Colonel Wm. C. McChord and Major Karl S. Axtater departed July 11th for detached service at Scott Field, Ill., the latter returning on July 15th.

Captain Evers Abbey departed July 11th for detached service at West Point, N.Y., returning July 13th.

Visitors to the Chief's Office were Colonel H.B. Clagett, Commanding Officer of Selfridge Field, Mich.; Captain H.C. Wisehart, from Richards Field, Kansas City, Mo., on July 13th; Major Raymond Morrison, from Hamilton Field, Calif., July 10th; Colonel Albert L. Sneed, enroute from Philippines to Maxwell Field, Ala., July 10th; Major Wallace G. Smith, from Maxwell Field, on July 10th; Lieut. Colonel Carl Spatz, on leave from Langley Field, and Major LeRoy A. Walthall, from Barksdale Field, on July 13th; Captain John F. Guillett, from Barksdale Field, July 13th; Captains John F. McBlain and James M. Bevans, from Maxwell Field, on July 14th.

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GRADUATION OF STUDENTS FROM TECHNICAL SCHOOL

Graduation exercises for the officers' classes of the Air Corps Technical School, Chanute Field, Rantoul, Ill., were held on the morning of June 30th at the Officers' Club.

The officers' classes were composed of 45 members and they, along with those in the audience, heard an interesting address by Brigadier General Henry H. Arnold, Assistant Chief of the Air Corps, who flew to Rantoul on the previous day and was a guest of Lieut. Colonel Junius W. Jones, Commandant of the School.

Lieut. Wallace I. Wolverton, post chaplain, offered the invocation and benediction. Introductory remarks were made by Colonel Jones, and music was furnished by the post instrumental group.

Graduating from the Engineering Maintenance course were Captain N.L. Cote, Lieuts. C.T. Mower, H.W. Pennington, William P. Sloan, Howard Moore, Tom W. Scott, Morley S. Slaght, Richard A. Grussendorf, Morris J. Lee, Norman R. Burnett, Sory Smith, Lester H. Kunish, Nicholas E. Powel, Ray W. Clifton, Air Corps, and Captain Calvin R. Freeman of the U.S. Marine Corps.

Graduates from the Communications Course were: Captain F. Edgar Cheatle, Lieuts. Walter E. Todd, Edward H. Underhill, Thomas L. Bryan, Jr., Berkely E. Nelson, James S. Sutton, John J. Hutchison, David H. Kennedy, Richard T. King, Jr., Edward S. Allee, Air Corps, and Third Lieut. of the Philippine Army, Jose Francisco.

Officers graduating from the Armament Course included Lieuts. Norman H. Ives, Archibald H. Hanna, Carl W. Carlmark, William H. Wise, Watson M. Frutche, John O. Neal, William T. Hudnell, Jr., Francis L. Rivard, Chester W. Cecil, Jr., Air Corps, and Captain Frank G. Dailey, U.S. Marine Corps.

Lieuts. Robert K. Taylor, Henry K. Mooney, and Andrew Meulenberg, Air Corps, graduated from the aerial photographic course.

National Guard officers completing a two months' course in mechanics were Captain Earl T. Showalter, Lieuts. John D. Howe, Leo Katzman, Walter W. Wise, Frank T. Cashman, William G. Ferwood and Melvin S. Hollidge.

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AIR CORPS
NEWS LETTER

CONNECTICUT NATIONAL GUARD

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VOL. XX AIR CORPS NEWS LETTER NO. 15.
Information Division
Air Corps
August 1, 1937
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Washington, D.C.

The chief purpose of this publication is to distribute information on aeronautics to the flying personnel in the Regular Army, Reserve Corps, National Guard, and others connected with aviation.

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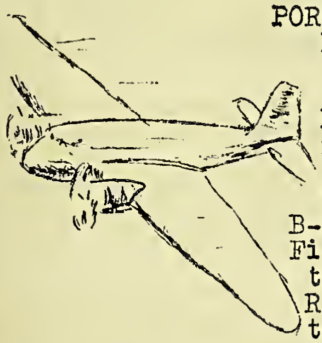
PORTO RICAN FLIGHT BY NINTH GROUP BOMBERS

By the Mitchel Field Correspondent



Perhaps the most remarkable thing about the recent flight of Martin B-10B's from Mitchel Field, Long Island, to San Juan, Puerto Rico, was the matter of fact manner in which the flight was planned and executed. The accomplishment of the flight was just another silent salute to the progress of modern airplane and engine development and to the progress of training within the Air Corps.

In mid-June, the Commanding Officer of the 9th Bombardment Group received orders to dispatch three B-10B's to San Juan, via Miami, and return. Not so many years ago, the reception of such an order would have created quite a furor. A mad search for competent navigators would have been instigated - telegraphic requisitions for aperiodic compasses, drift sights and malted milk tablets would have gone out to Air Corps depots - in short, all activities at the Base would have been directed toward making adequate preparations for the forthcoming flight.

Preparations for this flight could not have been more in contrast to the mad frenzy associated with bygone days. Three Martins, which had been engaged in the routine instruction of West Point cadets, were diverted from normal operations, given 40-hour inspections, and were ready to go. Any of the combat crews of the Group would have been competent to accomplish the flight, so those who were selected to man the airplanes considered themselves "lucky" to get this opportunity to make a flight just a little different from the ordinary run of cross-country flying.

The flight took off from Mitchel Field for Miami, Fla., shortly after daybreak on June 24th, under the command of Capt. F.B. Valentine. The course from Mitchel Field to Tybee Island Light House, near Savannah, Ga., was principally overland. From Tybee Island Light House to Miami Municipal Airport, the course lay mainly over the Atlantic. The first day's flight of 1,000 nautical miles was accomplished in 7¼ hours. The Wright "Cyclones" perked along beautifully at 1525 RPM and 28" of mercury.

The City of Miami lived up to its reputation for hospitality, when officials of the Air Chamber of Commerce took the officers and men in tow until "taps" which, in view of the long hop scheduled for the following day, was not long after dinner.

With bomb bay tanks loaded to the gills, the planes departed from the Miami Municipal Airport on June 25th. Fowey Rocks Light House was the initial point, and the first turning point of the course was off Cayo Romano, Cuba.

Midway between Miami and Cayo Romano, the oil pressure on the right engine of Captain Valentine's airplane fell off to the danger point and, after instructing the other two airplane commanders to continue the flight, he swung around and returned to Miami, where he remained until the other two ships returned from San Juan.

From Cayo Romano the course led past the southwestern tip of Great Inagua Island to a point off Cape Monte Cristi, Dominican Republic, thence approximately paralleled the north coast of Hispaniola to Cape Viejo Francis. From here the course lay generally ESE to San Juan. The distance of 956 nautical miles from Miami to San Juan was covered in eight hours against moderate head wings, at the same RPM and manifold pressure as had been maintained on the previous day's flight.

Dead reckoning navigation was used throughout. At no time was there any question as to position. Ample check on the accuracy of dead reckoning calculations was provided by the existence of three or four good check points enroute, from which bearings were taken.

June 25th and 26th were spent in Puerto Rico preparing the airplanes for the return flight and enjoying the sights of San Juan and vicinity. Pan-American servicing facilities were made available. Gas was pumped by hand from drums and proved to be a long drawn out process. The twenty-hour inspection made at San Juan might very well have been omitted, for the engines were in perfect shape.

The officers at El Morro, Headquarters of the 65th Infantry, took upon themselves the task of educating the visiting airmen to Puerto Rico in two days and, needless to say, they did a very thorough job of it. Historically, San Juan is fascinating with its 16th Century Spanish forts. One could not help but gaze in astonishment at the thick walled embattlements and wonder at the huge amount of labor and materials necessary to their construction. Legend has it that the King of Spain once strolled down to the beach bordering the Bay of Biscay and, shading his eyes so as to get a better view eastward, exclaimed: "I have poured so much gold into the fortifications of Puerto Rico that I should be able to see it from here."

The city is a queer combination of the modern and the antique. Strolling down a granite paved street scarcely wide enough to accommodate the passage of two autos, you encounter Sammy Goldstein's Dress Shoppe sandwiched between old Spanish edifices.

All of the U.S. Army troops, except the officers, are native Puerto Ricans. Immediately noticeable to the casual visitor is their trimness and the high degree of morale and discipline which pervades the entire regiment. Rumor has it that the enlisted personnel of the command average five children per man.

It was with regret that early on June 27th the flight left San Juan. The heavily loaded B-10B's used every foot of field on the take-off, although there was a moderately brisk wind blowing. Upon completion of a 3,000-foot runway which is now under construction, hazards incident to take-off will be considerably lessened. The route to Miami lay over the same course as had been followed on the 25th and was uneventful - never, however, to the point of boredom, for there was always enough water beneath the planes to keep everyone on the alert. The elapsed time of the day's flight was 6¾ hours.

After spending the night in Miami, the flight took off on the morning of the 28th for Mitchel Field and arrived thereat in 7½ hours. The total flying hours from Mitchel Field to Puerto Rico and return, a distance of some 3812 nautical miles (4395 land miles) was 29¾ hours.

In closing, it might be well to give a few of the conclusions reached by members of the flight as a result of the trip. First of all, from the point of view of comfort, the Martins leave much to be desired during an extended flight. After four or five hours with eyes glued upon the lubber line of a gyro, the pilot begins to see pink elephants - with no relief in sight until a landing is made. Secondly, the navigators are in sore need of room in which to spread out the charts and other paraphernalia which are his stock in trade. A drift sight capable of reading drift at relatively high altitudes is a necessity. Another crying need is an emergency ration kit, buoyant and easily opened.

Radio communication between the planes and ground stations was highly successful. Position reports were sent out at every turning point and every half hour thereafter. In every instance they were promptly acknowledged. Illustrative of the efficiency of the radio set-up was the fact that when the planes were landing at San Juan, Station NYYC at Miami intercepted the inter-plane landing instructions.

The Naval Air Station at Lakehurst, N.J., took radio bearings on the flight after each position report. On the trip from San Juan to Miami, radio compass indications were picked up as the flight passed Great Inagua Island, some 500 miles out.

As went the radio, so went the entire flight - not exciting, not hair raising, but a quiet tribute to modern Air Corps equipment and training.

Ed. Note:

It is interesting to recall that over 14 years ago, April 3, 1923, to be exact, the Army Air Corps completed within the period of one month what was then considered one of the most remarkable pioneering ventures in the history of American aviation, namely, the flight of six DeHaviland airplanes from Kelly Field, Texas, to San Juan, Porto Rico, and return to Bolling Field, D.C.

The flight from Miami, Fla., over water for the most part, to San Juan, involved stops at Key West, Fla.; Havana, Santa Clara and Guantanamo, Cuba; Port Au Prince, Haiti, and San Domingo City, San Domingo. The departure from Miami was made on the morning of March 11, 1923, and San Juan was reached at noon on March 19th. The return flight over the same route was started on March 23rd, and Miami was reached on March 29th. The flight involved a total distance of approximately 6,000 miles.

In the report which was made on that flight, one particular sentence should provoke a smile - "The Porto Rican flight demonstrated the ease with which aerial communications may be established with the insular possessions of our country, such as Porto Rico."

Two of the twelve pilots who participated in this flight, Lieuts. C.B. Austin and Ivan G. Moorman, have since died from natural causes. The leader of the flight, Thomas G. Lanphier, then a Captain, and Erik H. Nelson, then a 1st Lieutenant, resigned from the Air Corps a number of years ago. The remaining eight members of the flight are still affiliated with the Air Corps, viz: Majors Caleb V. Haynes, James A. Woodruff, George C. McDonald, Rex K. Stoner, D.H. Dunton, Newton Longfellow, Captains Guy Kirksey and Edgar T. Selzer.

SOVIET FLYERS ARRIVE AT MARCH FIELD

By the March Field Correspondent

Major Victor H. Strahm and Technical Sergeant Gregory A. Mitchell, Air Corps, both from March Field, Calif., were the first U.S. Government officials to welcome the now famous Russian flyers - Gromov, Yumasheff and Danilin - on American soil.

The fact that that soil happened to be part of Southern California and only 30 miles from March Field was rather a coincidence, since the Soviet flyers had flown all the way to the United States - Mexican border, near Caliente, but had been forced back north due to heavy fog banks along the Pacific shores.

Major Strahm, in answer to an excited telephone call from some farmer in San Jacinto, practically leaped into the nearest A-17A, and later managed to borrow a car in which he brought the tired but happy airmen back to the post. They arrived at March Field at 8:40 a.m.

Technical Sergeant Mitchell remained with the plane as official government representative. Knowing through news dispatches that the flyers were unable to speak English, an interpreter was held in readiness at March Field, but in his excitement he took a car to where the flyers had landed and missed them on their way in.

Word to the world was flashed at 8:05 a.m. that the Russians descended safely in a rough cow pasture two miles north of San Jacinto, 30 miles from the Air Corps Base, March Field. According to the first man who spoke (or rather tried to speak) to the foreign aviators, they kept repeating the one English word they knew: Army - Army - and wouldn't budge an inch until someone in authority arrived.

When this Correspondent on the way back towards March Field asked in four languages (neither of them Russian) why they had missed March Field, they said: "Malinki - Malinki," which means "small." They meant to imply that the field was but a small place on their maps and therefore hard to find - not that the field itself was too small, as newspapers erroneously stated. The huge bat-winged ANT-25-I, which made history throughout the world after its epoch-making flight, is at present being guarded by March Field soldiers. Civilians in the vicinity do not create a problem, however, and within a few days it is expected that the plane will either be flown here or dismantled on the spot for shipment back to Russia.

Upon arrival at the field here, the flyers expressed their admiration for the neatness and cleanliness of the quarters, and made use of the toilet facilities offered to them by officers of the local Officers' Club. Colonel Carlyle H. Wash welcomed them, in the name of the Government and the Army Air Corps, to March Field, acting in charge during the absence of Colonel John H. Pirie.

In general, the huge mat in front of the Headquarters Building enjoys quite a bit of traffic, since March Field serves to many Los Angeles flyers as a short and convenient stop-over to and from Palmdale, Imperial Valley and other places of interest. But it appears as if all records were broken that Wednesday, with 18 private planes, including a chartered United Air liner, on the field by 9:00 a.m. And they kept on coming in throughout the day.

The Officers' Club was besieged practically from the moment word was flashed to the outside world, and newsmen found the Russians willing enough to pose for a few photos, but they did not get much satisfaction from their conversation. The flyers were practically taken charge of by their government's representatives here.

The Russian aviators retired by 11:00 a.m., having had a light ham and egg breakfast (American style) at the Club's mess room, and slept until 6:00 p.m. In the meantime, plans were made by the N.B.C. Broadcasting network to have the flyers speak over the microphone in a national hook-up, and with direct contact to Moscow. They spoke in their native tongue. The broadcast lasted from 6:45 until 7:00 p.m.

In the meantime, March Field officials had taken over the permanent guarding of the unique aircraft which had carried three daring aviators to fame, posting several men from the 4th Air Base Squadron there and having the plane roped in, so that too-well wishers could not damage the craft in their enthusiasm.

After the broadcast, the March Field guests had a light supper, and left about 9:00 p.m. with Acting Consul General Grigori Gokhman for San Diego. During the broadcast they gave word to their praise in connection with the rousing welcome afforded them and the hospitality offered them by the Air Corps representatives. Colonel Mikhail Gromov, in thanking Brigadier General Delos C. Emmons, for his well wishes, expressed the hope that the flight made by them would help create better understanding between the United States and the Soviet Union. It has been given to understand that the plane will be dismantled as it stands, with Air Corps mechanics giving a helping hand.

DOUGLAS B-18 ARRIVES AT HAMILTON FIELD
By the News Letter Correspondent

The first of the newest defense weapon of the Army Air Corps - the Douglas B-18 Bombardment airplane - arrived recently at Hamilton Field, Calif.

This airplane is a forerunner of the type with which all units of Hamilton Field will be equipped within a very few months. The Douglas Bomber is one further advancement of the research carried on within the last two years by the Douglas Aircraft Company during the development of the radical Douglas Transport which is now in use throughout the entire civilized world.

Although the B-18 is designed solely for military use, and thus differs in most respects from the commercial type transport, the basic problem of wing and fuselage design to carry great weights at high speeds was solved by further refinement of its commercial sister plane.

While no formal performance test has been conducted on this newest airplane, it is known that it is capable of carrying a substantially larger load than the present Martin B-10B type airplane with which the units at Hamilton Field are now equipped and, in spite of this larger load, its efficiency is not diminished. It attains a high speed in excess of 225 miles an hour, with a sufficiently large radius of action adequately to protect the entire Pacific Coast.

The airplane is an all-metal, low-wing monoplane, powered with two of the latest type Wright "Cyclone" radial engines. It is one of the first combat planes to diverge from the traditional Army coloring of yellow wings and blue fuselage, being left in its natural state of gleaming aluminum. However, the customary Army identification on wings and rudder surfaces remains.

This new Douglas Bombardment airplane is one of the first of 177 of its type purchased by the Air Corps for the use of the GHQ Air Force, of which Hamilton Field is a part. When the units of Hamilton Field are entirely equipped with this new airplane, they will be able to provide a defense for the Pacific Coast, especially of the Bay Area, second to none.

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On June 22nd, Lieut. Colonel Harvey S. Burwell, Air Corps, took over the responsible position of Commanding Officer of the 19th Bombardment Group at March Field, Calif. He relieved Lieut. Col. Hubert R. Harmon, who was assigned to duty as a student at the Army War College, Washington, D.C.

Colonel Burwell was accompanied to his new station by Mrs. Burwell and their son.

NAVIGATION TRAINING AT HAMILTON FIELD
By the News Letter Correspondent

The course of instruction in Navigation conducted by the Navigation School of the 88th Reconnaissance Squadron at Hamilton Field, Calif., was completed on July 1st. Nine officers were rated qualified navigators, and the Squadron now has all but one of its officers qualified. The problems and missions in the course were designed to carry out every type of problem in dead reckoning navigation. The last month of the course was devoted solely to test problems of the most difficult type, and each student was required to perform successfully these problems in order to pass the course.

The 88th Reconnaissance Squadron has four junior officers who have partially completed a course in celestial navigation. These officers have frequent opportunities to practice Celestial Navigation in the air, and will be well qualified to take the Group Celestial Navigation course when it is started.

The Squadron is conducting an Advanced Dead Reckoning Navigation School for the 7th Bombardment Group. The School began on July 14th, with ten officers from the Bombardment Squadrons and three officers from the 88th Squadron as students, all of whom are qualified navigators. The course deals solely with long range interception and search and patrol missions over sea to a maximum distance of 300 miles.

Two OA-4A airplanes are used for flying the missions. The students who had not previously flown this type of airplane (amphibian), were taken to Clear Lake for transition and water landings. The water landings proved to be good sport and brought the comment from some that they would enjoy being forced down at sea just to land on water again.

The over-water flying in this course, as in all other over-sea flying at Hamilton Field, is quite safe, every available means of safety precaution being employed.

One of the combat crews has an interesting mission during the first part of July. The mission terminated at Modesto, Calif., in the afternoon. Upon landing, two local civilian flyers presented themselves and proceeded to entertain the Army airmen with a varied assortment of refreshments. Modesto has a warm place in its heart for Army flyers. The crew took off at sundown on a celestial navigation mission which ended at Hamilton Field.

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Major Isaiah Davies, Air Corps, who returned from duty in the Philippines and reported at the Advanced Flying School at Kelly Field, Tex., on July 6th, was assigned to duty as Secretary, Public Relations Officer, Director of Ground Training and Post School Officer.

AERIAL WARFARE IN SPAIN

Extracts from an article which appeared in a recent issue of the French aviation magazine "Revue de l'Armee de l'Air", which touches on aerial operations in the Spanish conflict, are quoted below as of possible interest to readers of the News Letter, viz:

"On July 18 (1936) Spanish aviation, with machines in the number of 160 to 180, was essentially made up in equal parts of Nieuport 52 single-seater pursuit planes and Breguet 19 two-seaters.

During the first days of the conflict at least three fourths of the aviation effectives went over to the side of the Rebels, but the actual combat equipment was soon composed of highly effective German and Italian machines, provided with German and Italian crews.

German and Italian Materiels

During the weeks of September and October, when the aerial superiority of the Rebels was manifest, their aviation always collaborated in the same manner during the frontal attacks. These were most frequently conducted over fronts of five to six kilometers on either side of a road, which permitted of massing and moving more easily batteries of 155's and 105's and 75's, tanks, and armored cars. Before the infantry attack was released, aviation came into action with the bomb (10 kilograms) and then with the machine gun, and frequently brought about the rapid demoralization of improvised, poorly sheltered and poorly armed infantrymen.

It was estimated that at the middle of October, General Franco's staff had at its disposal about 200 airplanes, two-thirds of which were pursuit planes (Heinkel, Arado and Fiat) and one-third bombers (Savoia-Marchetti and Junkers). This number seems to have been maintained to mid-January in spite of serious losses, evidently thanks to constant resupply or to the setting up on the spot of numerous reserve machines brought into Spain at the beginning of the Civil War.

The Junkers Ju. 52, derived from a civilian type, are poorly defended; no turret in front, two turrets in the rear, the one above firing only toward the tail and on the sides, the one below firing only toward the front. The Savoia-Marchetti S. 81, while better armed, seems to have turrets which are very hard to maneuver. Bombers of these types, if isolated and attacked by two or three pursuit planes, are lost.

The fire power of the Heinkels and Arados (two machine guns with accelerated fire) is very great. The Fiats C.R. 32 have proved to be very vulnerable toward the front, where the water and oil radiators are easily struck. Their gasoline tank is uncovered under the fuselage, and almost all the airplanes of this type which have been brought down have caught fire before touching the ground.

The German pursuit planes, always operating in patrols of three with remarkable flexibility, attack the bombing planes in the rear and from below while concealing themselves from the sight of the machine gunner of the lower turret behind the stabilizer and the tail wheel. They attack in turn in a line and make only one pass, breaking off the combat in order to form and patrol again at once. For lack of such tactics the Italian pursuit planes, though individually adroit, have suffered serious losses.

Among the aerial bombardments of Madrid, that of December 17 seems to have been the one in which so far the greatest number of machines were engaged: 25 Junker trimotors protected by 23 Heinkels are said to have taken part in it.

In the Balearic Islands, intervention of Italian airplanes some ten days after the landing of the Government forces was decisive. Some 20 land machines, which had probably come from Sardinia for the occasion, bombarded and machine-gunned until the situation of the landed troops had been rendered untenable; these latter were too poorly armed to reply to the attack. * * * *

French and Russian Materiels

On the government side the old Breguets and Nieuports available had a brief career. Heterogeneous materiel without military value, acquired in haste, did no more than clutter up the hangars. A small number of modern French military airplanes, purchased without armament and equipped in Spain with second-hand Vickers and bomb launchers, constituted in fact to the end of October the aviation of the Madrid Government. At this latter date, as is now known, a large number of Russian bombing planes and pursuit planes intervened in the aerial combat. It seems that their number quickly became equal to that of the Rebel aviation and that this numerical equilibrium has been maintained since that time. But the quality of the Soviet machines, of which this was the first external manifestation and without doubt the first military intervention, must be made more precise at this point.

Of the Russian airplanes also, two-thirds are pursuit planes of the types I. 15 and I. 16.

The I. 15 is a small biplane of the Boeing type, with the lower wing set back toward the rear, a short fuselage provided with a Wright 'Cyclone' engine of 650 to 730 h.p. (without compressor), constructed on permit in Russia and with a 2-blade metal propeller. Four synchronized machine guns, breeches readily accessible to the pilot. Equipment for blind flying, with Sperry horizon. A fixed landing gear with very slender wheels and tires. Weight a little more than 1,000 kilograms. * * Very manageable; very simple mixed construction; 2½ hours radius of action.

The I. 16, of which the number does not appear to be very great, is a monoplane with low wings and short fuselage, with curving wing tip controllers, retractable undercarriage, and hand brakes. Wright 'Cyclone' engine (compressor operating at 2500 meters); 2-blade metal propeller. Maximum speed, over 450 kilometers (280 miles) per hour; two machine guns with accelerated fire in the wings; fixed line of sight; radius of action, over 2 hours.

The Russian bombing planes, of which some 60 soon came into action and which evidently derived in Russia from the current series construction, are remarkable bimotors of the 'S B' types, which in Spain are called the 'Katiouskas.'

The 'S B' is a monoplane with traversing wing; * * It is an extremely manageable fighting and bombing three-seater, whose maximum speed exceeds 425 kilometers per hour; * * The radius of action with 600 kilograms of bombs is said to be as much as 5 hours. * * *

The Russian crews, on board airplanes of good and high performance, with which they seem to be familiar, are distinguished by strict observance of very precise rules of group flight and of action in combat.

For the first time in war operations in which two air forces faced each other, the crews were systematically provided with parachutes. These latter seem to have functioned very well on the whole. But every time that a pilot or a machine gunner has opened his parachute immediately after leaping, he has been killed by the adversary's machine gun fire. Mention is made of the case of a pursuit flyer who was saved in these conditions because his two patrol comrades protected him all the way to the ground by interrupting their mission. It has become established that one must let himself fall to 150 or 200 meters from the ground before opening the parachute.

The aerial operations in Spain have revealed the great importance of camouflage against the attack of bombing planes. In particular, camouflage of the flying fields is an essential and delicate operation, properly entrusted to specialists who have undergone a long period of training. * * *

The quantities of bombing planes which have been observed since September 28 traveled in a number of as many as eight per mission, and the pursuit planes which escorted them were in the number of six, eight and sometimes twelve. The mean altitude of the day bombing raids was 2500 meters. The first protection patrol flew at approximately the same altitude, the second 1000 meters higher, and the third between 4,000 and 5,000 meters, never beyond 5,500 meters.

The pilots of single-seater machines who have been found by the Government forces seemed to be very well trained in group flying and aircraft fire. Being as a rule good maneuverers, they have avoided isolated engagements in which they have been outclassed several times by adversaries having at their disposal airplanes whose climbing abilities enabled the pilot in a short turn to take advantage of the height and then dive down onto the Fiat or the Heinkel. This superiority naturally became more and more pronounced as the altitude of combat increased. Conversely, the compressor with which the engines of the Government airplanes were equipped, made combat at a low altitude much less favorable to them.

It proves to be very difficult for a bombing multi-seater to get away by day from the attacks of a single-seater pursuit plane; the only effective protection is then in the escorting single-seater. In no circumstance has one seen bombing machines attacked by the enemy pursuit until this latter has endeavored to get rid of these escorting planes, whether by engaging them in combat or by waiting until the escort single-seaters and bombing planes have separated. The effective attacks have always taken place on the return from the raids; the aggressor had then slipped through the pursuit planes and had attacked the bomber, most frequently after a flight at low altitude very far under it in order to take advantage of the camouflage of its upper planes. It would then reascend and practice its attack at a level with the bombing plane by firing upon it from the rear in the axis of the tail. Only the machine gunner of the upper rear turret (or the machine gunner of the lower rear turret) had occasion to fire a few shots; but the volume of fire of the weapons at his disposal being very restricted, he received from the adversary a quantity of projectiles that was overwhelming.

Since the vulnerability of the multi-seaters is great, especially when they are equipped with water cooled engines, it is very risky to send them off on a day mission without an escort of five or six single-seaters for each bombing plane, the number of escort planes increasing by two per bomber in case of massive raids. It is then necessary that one pursuit plane remain permanently near each bombing plane so as to be able to protect it at any moment and especially at the moment when it sets out on the return journey. * * *

The destruction brought about by the steel-core perforating bullets is considerable. Such projectiles have several times pierced the length of the fuselage of multi-seaters, tearing off metal parts and transforming these parts into projectiles capable of superficially wounding the occupants of the airplane. The rents occasioned at exit by these projectiles, on sheet metal coverings, had a diameter up to 20 centimeters.

The most rapid multi-seaters were by far the least vulnerable. It was possible for them, in fact, to get awayfrom the attacks rapidly while the escort planes kept the enemy pursuit forces engaged. * * *

The Government multi-seaters have proved very vulnerable when they were attacked at a right angle on the side, on a level with the two engines. The objection frequently made that in the Spanish warfare there was a deficiency of qualified crews need not be considered here; for when skillfully attacked on the two sides by enemy pursuit planes the present multi-seater succumbs to its adversary. The comparison of an airplane to a flying fortress is possible only in the mind of theoreticians. The bringing down of attacking pursuit planes was possible of accomplishment only in case the crew had sufficient coolness to let the enemy plane approach to within 50 meters; in this case the firer of the rear machine gun could be certain of the result. In the attack upon a Potez by three Heinkel 52 pursuit planes, where from the very beginning the front pilot and the bomber were put out of action by wounds, the firer of the rear machine gun was able to defend himself at a distance of 50 meters in such manner that he brought down one Heinkel and was able to compel the other two to break off the fighting.

Until November the pursuit planes equipped with a compressor rendered very little service on the Spanish front. The reason is that the fighting there always took place between 100 and 3,000 meters of altitude, whereas these single-seaters are made to fight at altitudes of from 4,000 to 10,000 meters (13,123 to 32,810 feet). The Heinkel 52 and the Arado 68 are superior at altitudes of 100 to 3000 meters to the compressor machines as regards handiness and are equal to them as regards fighting qualities. The only advantage of the compressor machines was that of being able to take refuge at greater altitudes by switching on the compressor in order to climb very rapidly from 3,000 to 4,000 meters to 6,000 or 7,000 meters. Up to 4,000 meters the speed of climb was equal for the two categories of machines; from 4,000 meters up the superiority of the compressor single-seaters was such that the adversary could not follow them. As concerns armament, practice has demonstrated that the setting up of the machine guns in the wings of single-seaters is not satisfactory, for these distance-controlled arms cannot be reached by the pilot in case of need. The synchronized machine guns firing through the field of the propeller and placed in front of the pilot are preferable.

The method of the Rebels * * is that of full collaboration with the land forces, which makes it necessary to fly at altitudes of 100 to 2,000 meters. The tactics employed at present is the following: 10 to 20 airplanes, Heinkels or others, attack at a certain point with the machine gun and the small bomb. During this aerial attack the enemy infantry is preparing for the assault. When it is thought that the demoralizing effect has been attained which is expected of aviation, the enemy releases the attack protected by its air force. This demoralization is often obtained, especially in the absence of any anti-aircraft defense. I have had occasion to converse with former French or German combatants who were in command of Government units of the first line; all of them have assured me that it was impossible to induce the machine gunners to fire upon enemy airplanes flying at a low altitude and attacking the troops with the machine gun and the grenade. From this experience one may draw the conclusion that it is necessary to organize a tactics of strict collaboration between the air force and the ground troops, whether for the defensive or for the offensive. These formations must in so far as possible be numerically superior to those of the enemy, for the enemy judges the air forces not in accordance with the speed and quality of the machines but in accordance with their number.

In my opinion, experience has shown that the excessive complication of the modern pursuit plane is leading into a blind alley. In time of war it is impossible to count upon great numbers of specialized pilots capable of managing special types of machines. It is necessary to take account only of the average of the pilots utilized, and it is this medium personnel, it is these reserves, which alone are determining. In my opinion, the instruction of a pilot for modern pursuit planes should cover at least six months. Moreover, the attention required by the very maneuvering of these machines quite prevents the pilot from exploiting the flying and military qualities of the machine. In combat the pilot is obliged to concentrate all his attention upon the enemy and not upon the maneuvering of his machine; but the pilot of the most recent single-seaters has not only to conduct a combat against the enemy but in the first place against his airplane itself. * * *

As concerns metal airplanes, practice seems to demonstrate that they do not stand comparison with the machines of mixed construction. If a metal airplane is damaged, it is obliged to undergo a general overhauling, while a machine of mixed construction can usually be repaired on the spot. In my opinion, the pursuit plane with wooden coverings and steel frame is preferable, not only because repair is easier but because their manufacture in series is more rapid and less onerous.

Retractable landing gears should be proscribed as regard pursuit planes. The reason is very simple; after one or two aerial combats the pilot is exhausted and he cannot still be expected to concentrate all his attention upon landing. Furthermore, practice has demonstrated that one bullet suffices to prevent the functioning of the mechanism, whether it be electrical, pneumatic or operated by hand. Too often, therefore, the pilot is obliged to land without the gear, and it follows that even if he is not wounded the machine is nevertheless put out of commission. * * *

I believe that the present task of military aviation is that of producing a great number of airplanes of light types and of instructing for them all the pilots required in order to be ever ready both for the defense of the troops and for the defense of the cities.

The complicated pursuit planes of 1,000 h.p. and over can render great service at altitudes of 6,000 to 10,000 meters; but what is the use of that if the enemy action unfolds between the ground and 3,000 meters? Moreover, for the price of one of these pursuit planes such as are now being manufactured in France and Great Britain it is possible to construct five or six light single-seaters, whose value in combat, at the lower altitudes, is certainly equal if not superior to that of the powerful single-seaters. Today it is not the quality of the materiel which plays the decisive role but it is especially the quality of the pilot and the number of airplanes engaged. Numbers are indispensable, for aviation is obliged to cooperate with the troops engaged on the ground; and these latter will have no confidence in their own aviation unless it is present in the battle in great numbers."

RECREATIONAL FACILITIES IN FLORIDA

For a nominal outlay of funds, Air Corps officers and their families are afforded the opportunity of availing themselves of a two-weeks' vacation period at a locality which offers such attractions as excellent climate, a splendid and difficult golf course, surf bathing, fishing, hunting, dancing and boating.

Quarters have been provided at White Point, Valparaiso, Fla., for the use of officers on duty with the Air Corps Tactical School and such other officers as may be so detailed at the Valparaiso Bombing and Gunnery Base. The quarters consist of ten 2-room cottages and five 3-room cottages, all modern and comfortable. When not in use by officers on duty at the Base, their use has been authorized for recreational purposes.

Valparaiso is located 50 miles east of Pensacola, Fla., on the Choctawhatchee Bay and adjacent to the Choctawhatchee National Forest. Paved highways lead in from the North-East and West. Fort Walton, a resort town, is located ten miles west and provides excellent Gulf swimming and other recreational facilities.

A splendid mess for officers and members of their families is operated by the officers' mess and the bombing and gunnery base at White Point. Meals are $1.25 per day or $8.00 per week, with half rate for children 12 years of age and under).

The charge for 2-room cottages is $1.25 per day and $5.00 per week, and for 3-room cottages $1.75 per day and $7.00 per week. Extra beds are 25¢ per day and $1.00 per week. Ice and bed linen are included in the above charges.

The cottages have two beds per room and are equipped with essential furniture, bedding and linen, towels excepted. It is desirable to bring camp chairs and such other equipment as the individual may desire.

Limited accommodations are available for the quartering of servants. Servants are not available locally, but arrangements for the care of children during evenings can be made with the wives of the caretakers.

Medical service may be had from the local contract surgeon on duty with the Civilian Conservation Corps, and at the Fort Barrancas Hospital at Pensacola. The railhead is at Crestview, Fla., 20 miles north on paved highway.

There is a sub-exchange of Maxwell Field at the base, carrying such items as tobacco, soft drinks, toilet articles, gasoline, oil, etc.

Priority in granting reservations is in the order set forth below:

1. Officers on duty with the Air Corps

Tactical School when on a duty status at the Valparaiso Bombing and Gunnery Base.

2. Officers of the Regular Army other than those mentioned in (1) above when on a duty status at the Valparaiso Bombing and Gunnery Base.

3. Officers on duty with the Air Corps Tactical School when absent with authority to visit Valparaiso, Fla., and vicinity.

4. Officers of the Regular Army, absent with authority to visit Valparaiso, Fla. and vicinity not covered by (3) above.

5. Such other individuals as may be authorized by the Commanding General, Maxwell Field, Ala.

Applications for reservations should be submitted to The Commanding Officer, Valparaiso Bombing and Gunnery Base, Valparaiso, Fla. Should it be impossible to grant reservations for period requested, optional dates will be recommended. Reservations are normally for a 14-day period.

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NEW CLASS AT SCHOOL OF AVIATION MEDICINE

Another routine course of instruction to qualify medical officers for duty as Flight Surgeons was commenced at the School of Aviation Medicine, Randolph Field, Texas, on July 15th, and will continue for four months. Eleven student officers are enrolled, five from the Medical Corps, U.S. Army, five from the Medical Corps, U.S. Navy, and one from the Medical Corps of the Mexican Army - Major Julio Cesar Aguilera, of Mexico City.

The Army medical officers are Captains John R. Copenhaver, Randolph Field, Tex. Burt Held, Barksdale Field, Shreveport, La. Paul H. Jenkins, Maxwell Field, Ala. Frank H. Lane, Langley Field, Va., and Donald D. Flickinger, March Field, Calif.

The medical officers of the Navy are Lieuts. Thomas L. Allman, Marine Barracks, Quantico, Va., and Alfred W. Eyer, Naval Hospital, Washington, D.C., and Lieuts. (jg) James C. Fleming, William O. Fowler and Dermot Lohr, all of the Naval Hospital, Washington, D.C.

Two basic courses are conducted annually at the School of Aviation Medicine, starting in July and December of each calendar year.

In addition to the resident courses, the School conducts throughout the year extension (correspondence) courses of considerable magnitude.

The School of Aviation Medicine is an activity of the Air Corps Training Center.

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THE NAVIGATION SCHOOL AT MITCHEL FIELD

The sixth class of the 9th Bombardment Navigation School at Mitchel Field, L.I., New York, started to work on July 6th. This very successful course of instruction has been running since August, 1935.

The Air Corps officers comprising the present class are Majors Ulysses G. Jones, Clarence H. Welch, Captains Joseph Smith, Milton M. Towner, 1st Lieuts. Emery S. Wetzel, Dwight Divine, II, Millard C. Young and Milton F. Summerfelt.

For the next three months the above officers will pursue a course in Dead Reckoning and Celestial Navigation, chart construction and allied subjects under the instruction of Captain John P. Doyle, Jr., and 1st Lieut. David P. Laubach, Air Corps, the latter having been recently appointed as Assistant Instructor in the School.

An outstanding feature of this course are the 63 hours of Meteorological instruction given by 1st Lieut. Royden E. Beebe, Air Corps. In this connection, the News Letter Correspondent states that this course in Meteorology is the most complete one given in the Air Corps to officers from a non-specialist point of view.

At present, practical navigation instruction at Mitchel Field is being conducted with two O-44 type amphibian airplanes and such Martin Bombers as are necessary. Approximately 60% of the flying is being done in the latter type aircraft. A new Sikorsky Amphibian type airplane, which is to be delivered in the near future, will aid materially in carrying out the practical problems of this type of training.

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COLLEGE STUDENTS VISIT AIR DEPOT

A group of about thirty advanced students in the summer session class in manufacturing policies and practices of the School of Business Administration, University of Texas, Austin, conducted by Dr. Chester F. Lay, Professor of Accounting and Management in that University, made a tour of observation through the Engineering Department of the San Antonio Air Depot on July 12th.

The students expressed themselves as being greatly pleased with and benefited by the opportunity of viewing the Depot's methods and practices.

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During the month of June, the Engineering Department of the San Antonio Air Depot, Duncan Field, Texas, overhauled a total of 17 airplanes and 58 engines and repaired 55 airplanes and 26 engines.

THE ARMY'S NEW MULTI-SEATER FIGHTER

Hon. Harry H. Woodring, Secretary of War, recently announced that the Army's new, experimental, multi-seater fighter was delivered from factory to flying field for final assembly and initial flight test.

This new type was designed and built by the Bell Aircraft Corporation, Buffalo, N.Y., to fill an imperative need by the Air Corps, in view of the present trend toward giant bombing planes of the Flying Fortress type now flying in the leading nations of the world.

This experimental fighter, technically called the XFM-1, meaning: Experimental Fighter, multi-seater, has been pronounced by flying men, who secretly have watched it grow from drawing board and mock-up to a completed article ready for flight, as a formidable fighting machine which should prove itself capable of coping with these Bombers.

The plane contains some radical departures from conventional military design. To begin with, it is a pusher - its propellers are behind the wings. The builder declares that this gives increased propeller efficiency. Equally important, however, is the fact that this arrangement permits the wing gunners, one on either wing, to have a free field of fire and observation to the front, uninterrupted by engine or propeller. This change in design also frees the gunners from having to work in the propeller blast, formerly a tremendous handicap to gun maneuver and accuracy.

To be a successful fighter, a flying machine must be much faster than its target. It is believed that this plane can overhaul any air targets. Another essential quality in an air destroyer is the ability to strike with power when it has engaged its prey. This plane answers with six guns, more powerful armament than ever before carried on a fighter. It also carries light bombs.

The new fighter is not a little airplane, as have been the Pursuit airplanes of the past. It accommodates a crew of five - pilot, co-pilot-navigator, radio operator-gunner, and two outboard wing gunners. It is powered by two engines recently developed by the Allison Engineering Corporation in conjunction with Air Corps engineers. No gasoline is carried in fuselage or engine nacelles, all being carried in liquid tight compartments in its giant wings. It is claimed that this method materially reduces the fire hazard.

The XFM-1 is a low wing, all-metal, monoplane, embodying all the latest design devices to increase its speed and air-worthiness. Its landing gear and tail wheel are electrically retractible. It carries flaps to reduce its landing speed. It provides heated compartments for all members of its crew, which will be much in demand at its fighting ceiling, over thirty thousand feet.

The builder of this plane points to the fact that it contains some new and radical departures which will have far-reaching significance for the civil air industry as well as the military. The first of these is its power plant location and its pusher propellers; next is the auxiliary power plant aboard for retracting landing gear, for lights, radio and starters. This auxiliary plant drives nine electric motors, taking this load off the two engines which drive the propellers. This new fighter can continue to transmit after forced landing when its main power plants are dead.

An innovation in this plane, on which military men look with great favor, is the complete interchangeability of any or all members of the crew. The wing gunners can travel between their stations and the main fuselage while in flight; the co-pilot can change places with the pilot, the radio operator can man the guns; all stations have intercommunication. The advantageous location of the wing gunners in front of the engines permits them to see the pilot, and he them; this makes visual signals practicable between all members of the crew. In addition, complete telephone inter-communication is provided.

After its initial shake-down flights at Buffalo, the plane is scheduled for flight to the Materiel Division, Wright Field, Dayton, Ohio, for completion of its experimental tests. When thoroughly tested for mechanical and technical details, the Chief of the Air Corps, General Westover, plans to send the fighter to the General Headquarters Air Force at Langley Field, Va., where new tactics will be devised to fit this new military type.

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ANOTHER "FLYING FORTRESS" FOR THE 49TH

Delivery of a Y1B-17 Boeing Bomber was made to the 49th Bombardment Squadron, Langley Field, Va., from the Boeing factory at Seattle, Wash., on July 3rd. The ferry crew included Captain Archibald Y. Smith, 1st Lieut. Robert F. Travis, 2nd Lieut. Carlos J. Cochrane, Staff Sergeant Troy V. Martin, Staff Sergeant Henry P. Hansen and Private 1st Cl. Russell E. Junior. With delivery of this plane, the Squadron has at present three of these new Boeing Bombers. Squadron operation and tactical efficiency have been greatly advanced by the acquisition of these new Bombers.

WEST POINT GRADUATES ASSIGNED TO UNDERGO FLYING TRAINING

Recent orders of the War Department detailed to the Army Air Corps for flying training a total of 106 second lieutenants of the Regular Army, who graduated from the U.S. Military Academy, West Point, N.Y., June 12, 1937. Constituting 36% of the entire graduating class, this is the largest number of West Pointers to choose the Air Corps as their branch of the service since the year 1929, when 110 members out of a graduating class of 297, or 37%, were detailed to the Air Corps for flying training.

The 106 young officers, above mentioned, are under orders to proceed upon the expiration of their graduation leave to Randolph Field, Texas, and report to the Commanding General of the Air Corps Training Center for duty and flying training.

The following tabulation shows the number of West Point graduates who were commissioned in the various branches of the Army, and the number from each of these branches assigned to the Air Corps for flying training, viz:

Branch of Service in which Commissioned		Assigned to Air Corps for flying training	Per Centage
Engineers	45	14	31
Q.M. Corps	6	3	50
Signal Corps	9	4	44
Field Artillery	50	17	34
Coast Artillery	36	10	28
Cavalry	29	18	62
Infantry	118	40	34
Total	293	106	35.6

A year of intensive flying training is ahead of these West Point graduates to whom aviation presents a special appeal, i.e., eight months of primary and basic training at the Primary Flying School at Randolph Field, Texas, and four months of advanced training at the Advanced Flying School at Kelly Field, Texas. Those who succeed in completing the year's course will be awarded the rating of "Airplane Pilot" and transferred to the Air Corps, while those failing to make the grade will return to the branch of the Army in which they were commissioned upon their graduation from the Military Academy.

It is now 16 years since the policy was inaugurated of assigning West Point graduates to the Air Corps for flying training. During the period from 1922 to 1936, inclusive, 911 West Pointers were accepted for flying training, of which number 403 graduated from the Advanced Flying School up to and including the year 1935. In addition, approximately 38 members of the 1936 Military Academy graduating class are scheduled to graduate from the Advanced Flying School next October, making the grand total of graduated flyers 441, or 48% of the number who commenced training. It would appear from this that slightly less than one-half of the young men who are mentally and physically qualified to undergo the course of flying training at the Air Corps Training Center are able to complete the course successfully.

The following tabulation covering a 15-year period of flying training given West Point graduates may be of interest:

Year	Total No. of Graduates	Assigned to the Air Corps	Pct.	Number graduating from the Advanced Flying School	Pct.
1922	102	16	15.6	8	50.00
1923	261	51	19.5	25	49.21
1924	406	61	15.0	20	32.78
1925	244	42	17.2	9	21.43
1926	152	18	11.8	7	38.88
1927	203	30	14.7	16	53.33
1928	260	77	29.0	53	68.83
1929	297	110	37.0	41	32.27
1930	235	85	36.1	41	48.23
1931	296	92	31.0	43	46.74
1932	258	69	26.7	39	56.52
1933	346	92	26.6	43	46.74
1934	247	60	24.3	30	50.00
1935	277	47	17.0	28	59.57
1936	276	61	22.8	38*	60.31
Total	3860	911	23.6	441	48.40

* Scheduled to graduate in October, 1937.

The West Point graduates of the June, 1937, Class, who will soon report at Randolph Field to learn the intricacies of piloting military airplanes, are enumerated below, as follows:

Class Standing	Name	Home
	Corps of Engineers	
2	Campbell H. Snyder	Winnsboro, La.
6	Jack N. Donohew	Slater, Mo.
9	Charles F. Mitchim	Inverness, Miss.
10	Frederick M. Thompson	Los Angeles, Calif.
12	Charles M. McAfee, Jr.	Knoxville, Tenn.
15	John D. Stevenson	Tie Siding, Wyo.
18	Nils O. Ohman	E. Dedham, Mass.
19	George L. Holcomb	Kemp, Texas
23	William R. Klingerman, Jr.	Terre Haute, Ind.
29	John M. Cromelin	Orange, N.J.
34	Walter Eckman	Houston, Texas
40	Richard P. Klocko	Dunkirk, N.Y.
46	Noel H. Ellis	Cisne, Ill.
50	Harold B. Wright	Calvin, Okla.
	Signal Corps	
63	Kenneth S. Wade	San Diego, Calif.
76	Gale E. Ellis	Beaver Falls, Pa.
77	Richard R. Barden	Penn Yan, N.Y.
92	Whiteford C. Mauldin	Lockesburg, Ark.
	Quartermaster Corps	
61	Thomas A. Holdiman	Marshalltown, Iowa
65	Donald B. Brummel	Chicago, Ill.
102	LeRoy H. Rook	Brooklyn, N.Y.
	Field Artillery	
28	Asher B. Robbins, Jr.	Elsmere, Del.
37	Douglass P. Quandt	Benicia, Calif.
59	John F. Batjer	Houston, Texas
67	John G. Eriksen	Milwaukee, Wis.
75	Harry F. Van Leuven	Minneapolis, Minn.
96	Elmer C. Blaha	Camden, N.J.
112	Ivan W. McElroy	Austin, Texas
113	William K. Horrigan	Fort Thomas, Ky.
140	Robert F. Lesser	Lincolnville, Me.
149	Sam W. Agee	Silver City, N.M.
164	Harold E. Marr, Jr.	Searport, Me.

Field Artillery (Continued)

173	Coy L. Curtis	Globe, Ariz.
178	Harry E. Hammond	Pine Bluff, Ark.
183	Charles B. Westover	Washington, D.C.
200	Conrad H. Diehl, Jr.	Washington, D.C.
203	Harry W. Elkins	Macon, Ga.
204	John W. Browning	Gainesville, Fla.

Coast Artillery Corps

58	Walter C. DeBill	Coeur d'Alene, Idaho
82	Charles L. Robbins	Elkhart, Ind.
95	Edward M. Lee	Carbondale, Pa.
103	Alvord Rutherford	Washington, D.C.
118	Alan D. Clark	Washington, D.C.
121	Robert H. Herman	Middletown, Ohio
150	Robert Taylor, 3rd	Baltimore, Md.
167	Curtis R. Low	Needham Heights, Mass.
174	Richard H. Hackford	Gardenville, N.Y.

Cavalry

86	Wilbur H. Stratton	Seattle, Wash.
98	John B. Nance	Seattle, Wash.
99	Bruce K. Holloway	Knoxville, Tenn.
108	Maurice A. Preston	Tulare, Calif.
125	Edward C.D. Scherrer	Anna, Ill.
132	Don R. Ostrander	Stockbridge, Mich.
136	Floyd J. Pell	Ogden, Utah
185	Carl L. Lindquist	Fort Hayes, Ohio
190	Samuel C. Gurney, Jr.	Ridgewood, N.J.
192	Harvey C. Dorney	Olney, Ill.
201	Paul W. Scheidecker	West New York, N.J.
205	James J. Cosgrove	Lancaster, Pa.
215	William E. McDonald	Urich, Mo.
220	John R. Ulricson	Milford, N.H.
222	Lawrence A. Spilman	Ottumwa, Iowa
224	William G. Hipps	Curwensville, Pa.
88	Richard W. Fellows	Algoma, Wis.

Infantry

64	John G. Zierdt	Grantville, Pa.
87	John F. Foy	Mount Airy, N.C.
142	Robert H. Stumpf	Barberton, Ohio
180	Jack E. Caldwell	Searcy, Ark.
184	James S. Hatfield	Orlando, Fla.
186	Horace Greeley	Jackson Heights, N.Y.
188	Richard G. Williams	Citronelle, Ala.
189	Joseph A. Miller, Jr.	Brevard, N.C.
196	George M. Maliszewski	Lowell, Mass.
219	Jasper N. Durham	Salem, Mo.
228	Joseph G. Focht	Reading, Pa.
229	Marshall R. Gray	Newton Center, Mass.
233	Augustin M. Prentiss, Jr.	Edgewood, Md.
239	Robert B. Hubbard	New York, N.Y.
241	Philip D. Brant	New York, N.Y.
246	Winfield L. Martin	Weehawken, N.J.
248	Colin P. Kelly, Jr.	Madison, Fla.
251	Woodrow W. Dunlop	Manville, R.I.
254	Gilbert F. Bell	Augusta, Ga.
256	Kenneth O. Sanborn	Potter Place, N.H.
258	George B. Sloan	Franklin, N.C.
261	Carl F. Lyons, Jr.	Maplewood, N.J.
262	Olen J. Seaman, Jr.	Bronx, N.Y.
268	James H. Skeldon	Toledo, Ohio
270	William J. Cain, Jr.	Bayonne, N.J.
273	Malcolm Green, Jr.	Sausalito, Calif.
274	Thomas E. Powell	San Francisco, Calif.
275	Ephraim F. Graham, Jr.	San Antonio, Texas
276	Charles W. Stark, Jr.	Trenton, N.J.
278	George M. Simmons	Point Pleasant, W.Va.
279	George R. Cole	Jersey City, N.J.
280	Frank W. Andrews	Glendale, Calif.
283	Gordon C. Leland	San Jose, Calif.

Infantry (Continued)

284	Morton D. Magoffin	Deerwood, Minn.
286	William R. Maxwell	Langley Field, Va.
287	James T. Posey	Henderson, Ky.
291	Wesley S. Calverley	Philadelphia, Pa.
294	Render D. Denson	Birmingham, Ala.
296	John F. Polk	Fort Bliss, Texas
297	John P. Connor	Pelham Manor, N.Y.

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STATION ASSIGNMENT OF RESERVE OFFICERS

The following-named second lieutenants of the Air Reserve, who graduated from the Advanced Flying School, Kelly Field, Texas,* were on July 15th assigned to various Air Corps stations, as follows:

To Barksdale Field, La.

Horace Daniel Aynesworth
Ancil David Baker
William Edwin Bayse
George Addison Blakey
Edwin Shepard Chickering
Raymond Leonard Cobb
Murray William Crowder, Jr.
Allman Tenney Culbertson
Raymond Leavitt Curtice
Ronald Frederic Fallows
Julien Walker Freeman
Charles Ross Greening
Charles Clark Kegelman
Guilford Roland Montgomery
Joseph Albro Morris
John Howard Payne
James Otis Reed
William Reynolds Stark
Frank King Thompson
Henry Viccellio
Barton Morrow Russell

To Brooks Field, Texas:

George Rochardson Carr

To Fort Knox, Ky.:

Howard Monroe Means

To Langley Field, Va.

John Richardson Alison
Henry Clay Godman
Milton LaFayette Hardeman
Wilbur B. Sprague, Jr.
Ansley Watson
John Russell Marshall
Adolph Edward Tikofski

To Fort Lewis, Wash.:

Thomas Danville Brown

To March Field, Calif.:

Murray Alston Bywater
Charles Alfred Clancy
Waymond Austin Davis
Arthur William Kellond
Richard Frederick Lorenz
George Leroy Robinson
Theodore Arnold Suiter
Delmer Edward Wilson

To Marshall Field, Fort Riley, Kans.:

Harold Yorke Sewart

To Mitchel Field, N.Y.:

Morris Edwin Thomas
McClellan Ferguson Stunkard, Jr.

To Scott Field, Ill.:

Henley Vedder Bastin

* June 9, 1937.

To Moffett Field, Calif.:
Guy Leonard Hudson, Jr.
Frederick Lawrance Moore
To Selfridge Field, Mich.:
Thomas Lee Butner
Leland Gordon Fiegel
Donald Harry Kauffman
Homer Matheson MacKay
Harold Jacob Rau
To Pope Field, Fort Bragg, N.C.:
Lewis Elliott Countway.

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RESERVE OFFICERS ASSIGNED TO RANDOLPH FIELD

Under Special Orders of the War Department, recently issued, the following-named second lieutenants of the Air Reserve have been relieved from assignment and duty at Brooks Field, Texas, July 15, 1937, and directed to report for duty at Randolph Field, Texas:

Henry Ovide Bordelon
George Stevenson Buchanan
Edward Francis Cullerton
William Edgar Davis, Jr.
William Eades
Clarence Theodore Edwinson
Dross Ellis
James Oldham Ellis
John Gebelin, Jr.
Willard Dudley Griffith
George Albert Hatcher
Robert Loughery Johnston
George Francis Keene, Jr.
Bingham Trigg Kleine
Andrew Olaf Lerche
Richard Dale McCloskey
Marion Malcolm
Donald Earl Meade
Andrew Dale Moore
Roy William Osborn
William Quenton Quearns Rankin
Frank Beard Scott
Horace Armor Shepard
Chester Lee Sluder
Cy Wilson
Robert Carroll Wood

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NEW SQUADRON COMMANDERS AT LANGLEY FIELD

Three Air Corps officers, who recently reported at Langley Field, Va., for duty, were assigned to the command of tactical organizations, as follows:

Major Harold L. George assumed command of the 96th Bombardment Squadron, relieving Major Jasper K. McDuffie, who is under orders for duty as student at the Air Corps Tactical School.

Major Russell L. Maughan, who recently graduated from the Army Industrial College, assumed command of the 33rd Pursuit Squadron, relieving Captain George F. Schulgen, who is to report with the next class at the Air Corps Tactical School.

Major William C. Goldsborough, formerly on duty at Selfridge Field, Mich., assumed command of the 37th Attack Squadron, relieving Captain Ned Schramm.

PHOTOGRAPHIC ACTIVITIES OF 88TH SQUADRON

During the GHQ Air Force Maneuvers on the West Coast in May, three K-3B and one Graflex cameras were sent out with each of the three Bombardment Squadrons in the 7th Bombardment Group. One photographer was detailed with each squadron to service the cameras in the field and forward exposed film to the laboratory at Hamilton Field. All bombing, except at night, was photographed. In addition, graflex photographs for records and for publicity purposes were made at each squadron's dispersed airdrome.

Just prior to the Maneuvers, photographs were made for the 2nd Wing Staff S-2 and S-3. These consisted of photographs of the squadron airdromes and camps at Stockton, Merced, Fresno, Visalia, Delano and Bakersfield, Calif., and a large mosaic of the area occupied by the 1st Wing at Muroc Lake.

During the Maneuvers, the photographic section performed all the photographic reconnaissance for the 2nd Wing. This required the production of the two additional mosaics of the 1st Wing area and daily flights to the enemy area for pinpoint and oblique photographs, each flight requiring about six hours flying time.

The photographic laboratory was kept open 24 hours per day by maintaining two working shifts. Considerable time was saved in making mosaics by using a stapling device instead of adhesive. Twelve copies of every photograph were required, which called for a high rate of production.

"Summing up the activities during the Maneuvers," asserts the Hamilton Field Correspondent, "it may be said that all in all the photographic section in conjunction with the squadron operations successfully completed its mission in keeping the Wing Headquarters informed at all times of the enemy's activities."

Following the Maneuvers, a test was completed on the T-1 Flashlight Bomb which had begun some time before. One bomb was dropped over Yerba Buena Island to take a night photograph of the San Francisco Bay bridge. The explosion shook houses and buildings to such an extent that it evoked the comment in a San Francisco paper that "It was undoubtedly the loudest photograph ever made." However, no damage was done by the explosion.

The photographic section of the 88th Reconnaissance Squadron is commanded by the photographic officer, 2nd Lieut. W.W. Pannis, Air Reserve. The section chief is Staff Sergeant Fredenburg. Six members of the section took the recent Air Mechanics examinations on Camera Repair and all passed - Privates, 1st Class, Greene, Atkinson, Privates Shelby, Farris, Johnston and Goodnight. Five members of the section fired and qualified as Expert Aerial Gunners, viz: Staff Sergeant Fredenburg, Private, 1st Class, Atkinson, Privates Shelby, Farris and Goodnight.

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Second Lieut. Charles A. Sprague, Cavalry, a member of the 1937 graduating class of the U.S. Military Academy, was assigned to Randolph Field, Texas, for flying training, thus making 105 graduates to be assigned to this duty.

BIOGRAPHIES

Lieut. Colonel Laurence F. Stone

Lieut. Colonel Laurence F. Stone, Air Corps, who was recently assigned to duty at Selfridge Field, Mt. Clemens, Mich., following his graduation on June 9, 1937, from the Advanced Flying School, Kelly Field, Texas, was born in Idaho, February 9, 1892. Following his graduation from the University of Idaho in 1915, with the degree of Bachelor of Science, he accepted a commission as second lieutenant of Infantry, U.S. Army, December 4, 1916. He was on duty at the Army Service Schools at Fort Leavenworth, Kansas, from January 3 to March 27, 1917, and was then assigned to the 11th Infantry at Camp Harry J. Jones, Arizona, where he commanded a company and later served as regimental adjutant until January, 1918.

While on duty overseas with the A.E.F., Colonel Stone served as brigade liaison officer to April, 1918; commanded a company of the 53rd Infantry to September, 1918; commanded a company and then served as battalion, regimental operations officer to February, 1919, on the front and in training areas. He was on duty as Assistant, G-1, 6th Division, to June, 1919, and with G-5, General Headquarters, Paris, France, to August, 1919. Upon his return to the United States he successively performed such duties as battalion commander, company commander and E. & R. Officer to August, 1920, being stationed with the 3rd Infantry at Camp Eagle Pass, Texas, and later with the 19th Infantry at Camp Harry J. Jones, Arizona.

Detailed in August, 1920, to the Army Air Service, Colonel Stone was a student officer at the Army Balloon School at Ross Field, Arcadia, Calif., and, upon completion of his lighter-than-air training, he remained at the Balloon School as Instructor, as Officer in Charge of Training and as Meteorological Officer. He was rated a Balloon Observer, May 9, 1921. During his tour of duty at Ross Field, he also took primary airship training, and for a brief period commanded the post in the absence of the regular commanding officer.

On June 29, 1922, Colonel Stone reported for duty at Scott Field, Belleville, Ill., where he served as Director of the Ground Department of the Balloon and Airship School, as Instructor, as Acting Assistant Commandant and as Assistant Commandant, to March 3, 1924. He also completed the course of instruction in airship piloting.

Transferred to Brooks Field, Texas, Colonel Stone was on duty at that station to June 9, 1924, and was then transferred to the Advanced Flying School at Kelly Field, Texas, where he completed the Special Course in Airplane Observation, following which he was assigned to duty as a student at the Air Service Engineering School at McCook Field, Dayton, Ohio. Upon his graduation from this School, he remained on duty at McCook Field in the Industrial War Plans Section of the Engineering Division. Colonel Stone participated in the National Elimination Balloon Race held at Little Rock, Ark., in April, 1926, piloting the McCook Field entry, with Captain G.R. Oatman as aide.

Assigned to station at Langley Field, Va., June 24, 1926, Colonel Stone was on duty as Instructor at the Air Corps Tactical School until September, 1927; then as student at this School for one year, and then as Instructor once more until August, 1929, when he was assigned to take the two-year course at the Command and General Staff School at Fort Leavenworth, Kansas. Graduating from this School on June 18, 1931, he was assigned to the Air Corps Training Center, Duncan Field, Texas, where, in addition to other duties he commanded the 67th Service Squadron. In August, 1932, he was assigned as Post Executive Officer at Randolph Field, and while stationed there temporarily commanded the post during the absence of the regular commanding officer.

Transferred to the Hawaiian Department in March, 1933, Colonel Stone was in command of the Hawaiian Air Depot during his two-year tour of duty in the Islands. In addition, he served as Purchasing and Contracting Officer of this Depot to August, 1933.

Upon the completion of his service in the Hawaiian Department, Colonel Stone was assigned as student at the Air Corps Primary Flying School at Randolph Field, Texas, where he successfully completed the 8-months' course of instruction, also the four months' advanced course at Kelly Field, Texas, thereby receiving the rating of "Airplane Pilot" in addition to the three other flying ratings already held by him, viz: "Balloon Observer", "Airship Pilot" and "Airplane Observer."

Colonel Stone was promoted to 1st Lieutenant, December 29, 1916; to Captain, October 12, 1917; to Major, August 28, 1929, and to Lieut. Colonel, temporary, March 12, 1935.

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LIEUT. COLONEL WILLIS H. HALE

Lieut. Colonel Willis H. Hale, Air Corps, now under orders for duty in the Panama Canal Department, was born in Kansas, January 7, 1893, and is a graduate of the Kansas State Normal School. From June 26, 1913, to March 23, 1917, he was a lieutenant in the Philippine

Constabulary, and he then accepted a commission as a second lieutenant of Infantry, with which branch of the service he served in the Philippines, China, England and France, being affiliated at various times with the 8th and 15th Infantry and with the 84th and 26th Divisions. He graduated from the 84th Division Signal School in 1918, and in the same year was an honor graduate of the Infantry School of Arms. In 1920 he graduated from the Army Signal School at Fort Leavenworth, Kansas, and, prior to being detailed to the Air Corps for flying training, he was on duty as Assistant Professor of Military Science and Tactics at Yale University, in charge of the Signal Corps R.O.T.C.

Reporting for duty as student at the Primary Flying School, Brooks Field, Texas, July 1, 1922, Colonel Hale completed the course of instruction thereat on May 26, 1923, when he was transferred to the Advanced Flying School at Kelly Field, Texas., from which he graduated on December 21, 1923. He was rated "Airplane Pilot" and "Airplane Observer," effective January 18, 1924.

Transferred to Langley Field, Va., Colonel Hale served as Commanding Officer of the 20th Bombardment Squadron and as Operations Officer of the 2nd Bombardment Group until September 1, 1927. In addition, he performed various duties incident to maneuvers and anti-aircraft tests at different times, and served as a member of various boards of officers.

After serving as Post Executive Officer, Langley Field, from September 1 to 16, 1927, he was assigned as a student at the Air Corps Tactical School at that post, and upon his graduation in June, 1928, he was transferred to Washington, D.C., for duty in the Inspection Division, Office of the Chief of the Air Corps. On December 30, 1918, he was assigned as Chief of the Operations Section, Office of the Chief of the Air Corps. In addition, he served as a member of the Air Corps Procurement Board. During the period from March 20 to April 30, 1930, he participated in the Air Corps Field Exercises at Mather Field, Calif. At various times he served temporarily as Chief of the Training and Operations Division.

Assigned in August, 1932, as a student at the Command and General Staff School, Fort Leavenworth, Kansas, Colonel Hale graduated from the two-year course at this school on June 16, 1934, following which he was again assigned to station at Langley Field, where he served as Commanding Officer of the 2nd Bombardment Group and later as Executive and Operations Officer of the 2nd Wing, Headquarters GHQ Air Force, until August 13, 1936, when he was assigned as a student at the Army War College, Washington, D.C., from which he graduated in June, 1937.

Colonel Hale was promoted to 1st Lieutenant, March 20, 1917; to Captain, November 5, 1917; to Major, December 1, 1929, and to Lieut. Colonel (temporary) March 2, 1935.

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TEN MORE "FLYING FORTRESSES" PURCHASED

The award to the Boeing Aircraft Co., of Seattle, Wash., of a contract for 10 more B-17 four-engine Bombers, the type generally known as the "Flying Fortress," was recently announced by the Secretary of War, Hon. Harry H. Woodring.

The airplanes purchased under this contract will be exactly the same as those recently delivered by the Boeing Company, except for minor changes found advisable as the result of the service test. The contract also includes an option for three additional Bombers, making a total of 13 on this order, and an adequate complement of spares. The total contract, if the option is exercised, will amount to $3,708,002.20.

Each airplane will be powered with 4 Wright "Cyclone" engines, manufactured by the Wright Aeronautical Corporation at Paterson, N.J. The Materiel Division of the Air Corps and the GHQ Air Force have been conducting an intensive service test of the "Flying Fortress" since January of this year. During this test, these airplanes have been flown thousands of hours under all conditions of heat, cold, wind and weather. They have proven to be eminently satisfactory for the purpose for which designed and are an outstanding example of the efficiency of American airplane manufacturers and designers.

These Bombers can fly at speeds in excess of 225 miles per hour, carry 5 machine guns and a crew of 7 to 9 men, including a commanding officer, pilot, copilot, navigator, engineer, bomber, radio operator, and gunners. All the members of the crew can freely change stations, and for long flights sufficient additional personnel can be carried so that the operators of the airplane may be relieved from time to time and secure the necessary rest.

This airplane can fly and maintain its altitude with a load on two engines. This safety factor practically eliminates the possibility of forced landings due to engine failure. Coupled with its long range, this makes it possible, by the use of radio communication, for this airplane to find a safe landing field somewhere, even when fog covers large areas.

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"IT'S NOT THE HEAT - IT'S THE HUMIDITY"

Here is a suggestion from the Power Plant Branch of the Materiel Division, Wright Field --

While your Power Plant personnel are suffering with the humidity ranging well above some 80 per cent, we are inclined to call your attention the phrase -"It's not the heat, it's the humidity." This is especially true in the filling of gas tanks. If gas tanks are not filled immediately after you land from a flight and the humidity is high, a small amount of cooling over night or even a portion of the daytime will cause several drops of water to accumulate in the bottom of your fuel tank. The engine will use up a portion of this water as it goes through your fuel lines to the carburetor. Please do not expect your engine to gulp it down by the tablespoon full, however, without a few nasty sputters, especially as you take off when your tail is raised to a flying position.

Please remember - it's not the heat - it's the humidity - fill your gas tanks immediately upon landing!

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NEW FLIGHT RECORDER

If the instrument invented by Dr. Samuel Spitz, creator of the famous marine depth sounder, proves successful, charting a transport's continuous progress through the skies by means of a small map in an airport office may be possible.

In the presence of Army and Navy officials, Dr. Spitz, of Burbank, Los Angeles County, conducted a 200-mile test of his "flight recorder" accurately and successfully plotting the progress of an airplane on a round trip flight between Los Angeles and Bakersfield. Another successful demonstration was conducted over the 400-mile airway from Los Angeles to Oakland.

While the plane flies toward its destination its movement is charted by means of an advancing series of lights, jumping steadily along a scale map of the airway terrain. As the ship proceeds slower or faster, the tiny lights also alter their speed. When the ship approaches the terminal, the light suddenly shifts to a localized map, more detailed. Thus a ground operator can guide the plane through treacherous mountains into the airdrome, even in zero zero weather.

Dr. Spitz began his experiments four years ago and has spent $100,000 in perfecting his invention. He disclosed that his laboratory has been incorporated for $500,000 and within two months he plans to build a factory beside his shops on Hollywood Way, Burbank, to produce flight recorders. Official tests are being conducted with Army and Navy and Department of Commerce observers to determine definitely the value of the invention.

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CHANUTE SOLDIER WINS FIREMAN'S TROPHY

Private 1st Class John I. Butler, 10th Air Base Squadron, Chanute Field, Rantoul, Ill., was recently awarded a handsome combination siren and red light for his work, attendance and interest exhibited at the Annual Fire College of the Illinois Firemen's Association which met at the University of Illinois for a three-day period.

The college is held by the Illinois Firemen's Association for the purpose of instructing in the latest practices of fire fighting and fire prevention. Present at this year's meeting were 456 firemen, fire chiefs and fire inspectors, representing communities from every part of the State of Illinois.

The work covered both practical demonstrations and written examinations in the following subjects: ladder work, rope work, first aid, artificial respiration, gas mask drills, pumps, fire-fighting apparatus and auxiliary equipment.

The Commanding Officer of Chanute Field, Lieut. Colonel Junius W. Jones, Air Corps, commended this soldier upon his excellent work at this annual college. Private Butler is at present on duty at the Post Fire Station and in the Post Fire Department. The winning of this reward is evidence of the interest that this young soldier is taking in qualifying himself for the military duties which he is performing.

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RESERVE OFFICER JOINS PAN-AMERICAN

From time to time the News Letter has published the names of Air Reserve officers who have terminated their active duty tours in order to accept positions with commercial air lines. While these frequent separations of Air Reserve officers are regretted by the Air Corps, there has been no disposition on its part to stand in the way of a Reserve officer who had an opportunity to land a permanent berth in commercial aviation.

These officers are not lost to the Air Corps, for they maintain their reserve status, and their services are available to their country in the event of an emergency. Those who enter commercial aviation, and who thus are enabled to add to their skill and experience as airplane pilots, are naturally to be expected to be of greater value to the nation in time of need.

(Continued on page 17).

NOTES FROM HERE AND THERE

The personnel of the San Antonio Air Depot, Duncan Field, Texas, on July 8th bade a regretful good-bye to its old commander, Colonel John H. Howard, and gave a hearty welcome to the new Depot Commander, Lieut. Colonel Henry J.F. Miller. Colonel and Mrs. Howard departed on that date for a two months' leave of absence, visiting relatives in Honolulu, before joining his new assignment, the Headquarters of the 7th Corps Area, Omaha, Neb., for staff duty, after having been in command of the San Antonio Depot since June, 1934. Lieut. Colonel and Mrs. Miller are no strangers to the Depot, as he was in command of Brooks Field, San Antonio, Texas, before coming to this station.

At the present time the 2nd Bombardment Group, Langley Field, Va., has received nine Y1B-17 type airplanes, and expects that the full complement of thirteen will be filled in the near future.

Miss Martha Hickam, daughter of Mrs. Horace M. Hickam and the late Colonel Horace M. Hickam, was married to 1st Lieut. Rudolph Fink, Air Corps, in the Base Chapel at Langley Field, Va., on July 14th, Chaplain Silas E. Decker officiating. Mrs. Brooke Allen, of Mitchel Field, N.Y., was matron of honor, and Lieut. William C. Bentley, of Langley Field, was best man. A small reception at the Langley Field Officers' Club for immediate friends and relatives followed the ceremony. Among the guests were Major Generals Oscar Westover and Frank M. Andrews, Mrs. Andrews, Brigadier General and Mrs. Gerald C. Brant, Colonel Henry B. Clagett, Colonel and Mrs. Walter R. Weaver, Lieut. and Mrs. Brooke Allen, Hubert, John and Barbara Hickam.

Colonel Weaver, Commanding Officer of Langley Field, arranged to have the wedding take place there, for he was a roommate and classmate of the late Colonel Hickam in the Class of 1908 at West Point.

Following the wedding trip, the newly married couple will reside at Dayton, Ohio, where Lieut. Fink will attend the Air Corps Engineering School at Wright Field.

Reserve Officer Joins Pan-American

(Continued from Page 16)

The latest Air Reserve officer to curtail his tour of extended active duty is Lieut. James L. Bledsoe who, as the Correspondent of the 33rd Pursuit Squadron, Langley Field, puts it, "is turning in his parachute this week and checking out of the Air Corps. Lieut. Bledsoe has signed up with Pan American, to be stationed at Miami, Fla. Jimmie is a very capable pilot and we feel sure he will make Pan American a good man."

On July 7th, the 8th Pursuit Group returned to Langley Field from Virginia Beach after two weeks' maneuvers, both in the air and on the popular beach. Everyone agreed that it was an ideal place for summer field work.

LIEUT. WALLACE RECEIVES THE D.F.C.

"For distinguishing himself by heroism and extraordinary achievement while participating in an aerial flight * * *," 1st Lieut. James H. Wallace, Air Corps, was awarded the Distinguished Flying Cross on Saturday, July 17th, at Hamilton Field, Calif., the entire personnel of the 7th Bombardment Group and the 5th Air Base Squadron witnessing the ceremony. The presentation was made by Colonel Davenport Johnson, Commanding Officer of Hamilton Field, and acting for the Secretary of War.

The circumstances leading up to this award to Lieut. Wallace were as follows: On November 20, 1935, Lieut. Wallace (then temporary Captain) as co-pilot, with Lieut. Frank A. Armstrong, pilot, was assigned the mission of flying Major Prescott, the Communications Engineer for the Republic of Panama, to the Panamanian Penal Colony at Coiba, Panama.

On the return trip to Albrook Field, a tropical storm arose over the ocean, forcing the flyers to return over two hundred and fifty miles of impenetrable jungle which separated them from their base at Albrook Field. Even over the land they were forced to fly over a dense fog bank which completely obscured their sight of the ground. The airplane, a Douglas OA-4A bi-motored amphibian, was about 4,000 feet above the ground when the right engine, without warning, disintegrated, throwing great strain on the right wing and the remaining engine.

At this very instant, Lieut. Wallace just happened to be in contact with Albrook Field over his ship's radio. The pilot, not knowing what was in store for him beneath the clouds, ordered the three passengers and Lieut. Wallace to jump. Lieut. Wallace, however, stayed at the radio, and as each passenger jumped he very meticulously checked them off to Albrook Field; then, taking his place beside the pilot while flying blind in the clouds, he assisted in preparing the airplane to land. Finally, the pair broke through the fog bank less than 1,000 feet above the earth and almost miraculously found directly in front of them a clearing in the tropical jungle, large enough to be used for an emergency field. Displaying great skill and courage, they landed the airplane with no damage whatsoever to either the airplane or to personnel. After a new engine had replaced the faulty one in the airplane, no further repairs were necessary, and the Amphibian was flown out of the clearing and back to Albrook Field.

In the citation accompanying the award of the D.F.C. to Lieut. Wallace, after setting forth, in substance, the circumstances reported above, it is stated: 'Lieutenant Wallace's courage and coolness in this emergency undoubtedly resulted in saving the lives of the passengers and preventing a crash landing."

Lieut. Wallace, now 32 years of age, attended the public schools of Washington, D.C., following that with two years at the Georgia Institute of Technology at Atlanta, Ga. After a year of training at the Air Corps Training Center, where he specialized in Pursuit Aviation, he received a commission as a 2nd Lieutenant in the Air Reserve in February, 1929. He obtained his commission in the Regular Army on June 12, 1929. In September, 1934, he was transferred to Albrook Field, Panama Canal Zone. Prior to that time he was on duty with the 49th Bombardment Squadron at Langley Field, Va., from May 2, 1929, to September 5, 1930; at March Field, Calif., attending Flying Instructors' School and serving as a flying instructor, from September 15, 1930, to October 5, 1931, and at the Primary Flying School at Randolph Field, Texas, from October 16, 1931, to September 4, 1934, where he performed the duties of flying instructor.

Lieut. Wallace has been stationed at Hamilton Field since January 1st of this year, and is now on duty with the 9th Bombardment Squadron.

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"AND I LEARNED ABOUT FLYING FROM THAT"

Another attempt is being made to publish in the Air Corps News Letter a series of articles under the above heading, embodying a report of some accident or near-accident, in the belief that much information of vital importance to fledgling pilots would thereby be disseminated.

Certain it is that almost every pilot in the Air Corps has on one or more occasions during his flying career experienced a close call, narrow shave, or what have you, or extricated himself from a predicament which he could have avoided in the first place had he "followed the rules." At some time or another he may have been confronted with a totally unlooked for happening, which made it absolutely necessary for him to think fast and act likewise, and some time he may have performed some foolish stunt which he mentally resolved never, never to do again, or - well, this could go on ad infinitum.

The point which it is desired to stress is that in bringing vividly to the attention of Air Corps personnel the mistakes or errors of judgment that lead to accidents many valuable lessons would be learned and retained in the memory where otherwise the lesson would be lost.

If the publication of such reports or stories would tend to influence in any way the reduction of aircraft accidents, one of the principal missions of the Air Corps News Letter would be accomplished.

And so the News Letter earnestly invites every Air Corps pilot to contribute one or more articles under the above heading for publication. The authors of such articles need not have to be accomplished feature writers to do this, and thereby perform a good turn for their fellow pilots. Just recite the facts, and the editing and added trimmings, if any are necessary, will be done in the Information Division. No names will be published if such is the wish of individual authors.

The full cooperation of every Air Corps pilot is earnestly solicited - so now, "Altogether, Boys!"

For the present there is published below an adventure which befell a Reserve officer, who recently took off on a navigation training flight in a P-26C airplane. All fuel tanks were filled, and the personal baggage in the airplane weighed about ten pounds.

After the pilot attained an altitude of 2700 feet, about one mile north of the airport, he performed the following acrobatics: double snap roll, slow roll, and snap roll. He went into the last maneuver at about 2700 feet; speed 140 miles per hour. During the attempted recovery from the snap roll, the airplane stalled on its back, going into an inverted spin. At 1,000 feet altitude, the airplane recovered from the inverted spin, but immediately went into a normal spin. After one turn of the spin, the pilot jumped with his parachute at an estimated altitude of between 600 and 800 feet.

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Numerous accidents of a similar nature have occurred in the past. It would appear that this accident might have been averted on three counts, viz:

1. If all the tanks on the P-26C had not been filled, thereby changing the balance of the airplane in such a way as to make recovery from spins more difficult, it probably would not have been necessary for the pilot to jump.
2. Had the pilot been more familiar with the type of plane he was flying, he would probably not have inadvertently fallen into an upside down spin.
3. If the pilot had had more altitude at the time he started his acrobatics he probably would have had time in this case to recover from the eventual normal spin, making it unnecessary for him to resort to his parachute.

These are three things which at least one pilot has learned and, if they are learned and taken to heart by even one-half of the other young pilots in the Air Corps, the loss of the airplane in this case will have been a profitable investment. To derive maximum value from the experience of pilots in the Army Air Corps, it is necessary to disseminate the information acquired therefrom as widely as possible. Each Air Corps officer is therefore requested to make known to his fellow pilots, through the columns of the News Letter, what he has learned and how he learned it, in order that they may avoid the pitfalls into which he had stumbled.

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Majors Lloyd C. Blackburn, from Barksdale Field, La., and Guy L. McNeil, from Fort Lewis, Wash., have been ordered to duty in the Philippines. Major Dache M. Reeves, 1st Lieut. Homer L. Sanders and 2nd Lieut. Potter B. Paige, who have been stationed in the Hawaiian Department, were assigned to duty at Chanute, Barksdale and Moffett Fields, respectively.

Major John E. Upston has been transferred from Maxwell Field to Langley Field, and Lt. Colonel Morris Berman from the San Antonio Air Depot to Wright Field, Ohio.

Air Corps
News Letter

F. C. BARRY

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VOL. XX AIR CORPS NEWS LETTER NO. 16

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The chief purpose of this publication is to distribute information on aeronautics to the flying personnel in the Regular Army, Reserve Corps, National Guard, and others connected with aviation.

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THE ARMY INDUSTRIAL COLLEGE

By Major Richard H. Magee, Air Corps*

ONE sentence in Major Ira C. Eaker's excellent article on the Command and General Staff School (July 15th issue of the Air Corps News Letter) impressed me very much, viz: "Should an Air Corps officer take the course at the Command and General Staff School or should he go to the Industrial War College?"

This question cannot be answered categorically; I believe selected officers of the Air Corps should attend both schools in order to attain a balanced and broad military education better to fit them for ultimate duty with the War Department General Staff. However, this is the age of specialization, and each Air Corps officer should determine early in his career the line of specialized work for which he is best fitted. If he has demonstrated special aptitude for supply and procurement work, he should unquestionably attend the Army Industrial College, and he should attend shortly after he has completed ten years' service, in order that he may have a maximum period of time to apply this knowledge for the benefit of the Air Corps.

Success in an emergency depends as much on materiel as on military strategy, and this fact is recognized not only by our own nation but by all the first class nations of the world. Success in modern war is only assured by the fullest use of the country's economic resources.

In passing, I would strongly recommend that each Air Corps officer diligently study "The Industrial Mobilization Plan of the United States," Revised Edition, 1936. A copy of this work should be available in the library of every Air Corps post. It can also be obtained from the Superintendent of Documents, Government Printing Officer, Washington, D.C. The study of this book will be an education in itself, and will be not only instructive but interesting.

The Army Industrial College was created in 1924 by the Assistant Secretary of War partly to carry out the statutory provisions of the National Defense Act. The mission of the College is fully and tersely stated in A.R. 350-5, and is "to train officers with a view to insuring

(a) Adequate knowledge of war-time needs in industrial organization and mobilization of materiel.

(b) Understanding of the technique of supervising war-time procurement of military supplies.

(c) Proper training for duty in the office of the Assistant Secretary of War."

In carrying out the above mission, close contact is maintained with the Planning Branch, Office of the Assistant Secretary of War; the Supply Arms and Services; the Navy Department, and the General Staff and other government agencies and departments. Outstanding lecturers in the economic and industrial fields present their views on economic and industrial problems.

The course itself consists of lectures, conferences, individual and committee problems. A brief resume of the course is listed below, in order that officers of the Air Corps may be fully informed as to the scope of the School.

Problem No. 1 - "The Fundamentals of Business" - is an individual problem and acquaints the student with the economic principles underlying the conduct of business operations. Economics, Statistics, Finance and Accounting, and Industrial Problems are studied during this problem, which requires 7-2/3 weeks.

Problem No. 2 - "Basic Industries" - consists of a committee study of ten of the basic industries of the nation, and is designed to give the student a general idea of the organization, operating methods and managerial problems of an important cross section of American industry. A resume of each committee's work is presented to the class as a whole at the conclusion of the problem, which requires three weeks to complete.

Problem No. 3 consists of an individual historical study of the procurement and industrial mobilization in the United States during the World War, paying particular attention to the Purchase, Storage and Traffic Division and emergency governmental agencies created during that period. This study requires three weeks.

Problem No. 4 - "War and Navy Department Organization and Procurement" - is a study of the organization of the War and Navy Departments and their coordinating agencies, with particular attention to their methods of procurement. It is partly an individual study and partly a committee study. Current procurement policies of the students' own arm or service are studied during the 2½ weeks required for this problem.

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*Graduate, Army Industrial College, 1937.

The above problems are introductory studies and prepare the student for the later problems of war procurement and economic mobilization.

The remainder of the course is divided into two broad fields. The first field, that of war procurement, consists of planning in time of peace for procurement in war, and the operation of the system in war as far as it pertains to the War and Navy Departments. This field is covered generally by problems Nos. 5 to 16, requiring 3½ weeks to complete. These are committee problems and consist of studies of:

5. War Plans.
6. Industrial War Load and Allocations.
7. Utilization of Automotive Industry.
8. Procurement Districts and Corps Area Procurement.
9. Inspection of Materials.
10. Personnel for Procurement.
11. War Contract Procedure and Policies.
12. Early Production and Improvization.
13. Construction in War.
14. Ships and Shipping.
15. Strategic and Critical Materials.
16. Control of Procurement.

Problems 5 to 16 cover special studies in coordinate fields related to the general subject of war procurement. They do not by any means, however, cover the entire field of war procurement. Presentations at the end of the study acquaint the entire class of the different committees' work.

Problem No. 17 - "Test of Protective Mobilization Plan" - is an analysis of the War Department Mobilization Plan, to determine how well stocks on hand and estimated production will meet procurement requirements of that plan. Most of the work on this problem will be by committees, with a presentation given to the class at the end of the problem. A period of 2½ weeks is spent on this phase of the course.

Problem No. 18 - "War Procurement" - is an individual problem lasting four weeks, in which each student makes a study of the planned war procurement system as a whole, and a determination of the problems involved in obtaining the munitions required in a major emergency, with an analysis of the peace-time planning methods and the proposed war-time management of the War and Navy Departments' procurement programs. Special situations are discussed in conference to test the students' knowledge.

Problem No. 19 - "Government" - furnishes the student with a knowledge of the current functions and potential war-time functions of the regular departments and selected executive agencies of the government, and covers a period of 2½ weeks.

The second field of study is one of Industrial and Economic Mobilization. Committee problems, Nos. 20 to 31, inclusive, cover in part the field of planning for, and executing war-time control of the economic resources of the nation. Studies are made of -

War Powers of the President and Congress.
Industrial Mobilization Plans.
Transition from Peace to War.
Licensing of Industry.
Public Relations.
Trade Organization and Regimentation.
Budgetary Control.
Control of Iron and Steel.
Neutrality.
War Trade.
Economic Analysis of Selected Nations.
Study of Control of Economic Resources of Selected Nations.

Presentation by committees to the class is made after 3½ weeks' study.

Problem No. 32 - "Industrial Staff Memoranda" - consists of individual studies of pertinent problems related to procurement planning and planning for industrial mobilization, and requires one week's work.

Problems Nos. 33 to 44, inclusive, cover special studies in coordinate fields relating to Industrial and Economic Mobilization, which studies require 3½ weeks and, as usual, presentations are given the class as a whole upon the completion of the allotted work.

These problems consist of -

War Finance.
War Labor.
Communications.
Transportation.
Power and Fuel.
Strategical Industrial Areas.
Economic Planning in case of loss of certain industrial areas.
Priorities.
Price Profit and Production Control.
Economic Readjustment following an Emergency.
Study of National Economy of Selected Nations.

The final written problem is No. 45 - "The Utilization of War Resources of the Nation." This may properly be termed the students' thesis, and covers a summation of the problems of industrial mobilization for war, together with recommendations as to the measures to be taken to insure their successful solution. The entire second field of study prepares the student for this problem, wherein the student is given full opportunity to present his views as to the method that should be adopted for the most effective use of the nation's economic resources in war. A period of 3½ weeks is spent on this highly worthwhile phase of the course.

The course is completed with a one week's war game, in which the principles of War Procurement and Mobilization of Economic Resources are applied to a definite situation.

Inspection trips are made to selected industrial plants and Army and Navy installations throughout the year. However, the most interesting and instructive trip is made to the Pittsburgh industrial area during June, just prior to graduation. Approximately four days are spent visiting -

Jones and Laughlin Steel Corporation,
Westinghouse Company,
Mesta Machine Company,
Mine Safety Appliance,
Pittsburgh Plate Glass, and the
Aluminum Company's new Kensington plant.

In this short paper it is impossible to enumerate the many interesting phases of work at the College. The course is highly instructive, interesting and worth while. It should be the ambition of every Air Corps officer to take advantage of the opportunity to complete the course at the Army Industrial College.

In closing, a quotation from the remarks of the Director, Colonel Harry B. Jordan, Ordnance Department, delivered during the Orientation talk last September, will do more to paint a true picture of the Aims and Policies of the College than anything else I can add, viz:

"In general, instruction here is self-instruction. There are no approved solutions or approved textbooks. You will do your own thinking and arrive at your own conclusions. When we are engaged upon some specific assignments in the service we all know that we must carry out loyally and cheerfully the policies of higher authority regardless of whether we agree with those policies or not. But this is a college and a graduate college at that; and if any officer has something on his mind that he thinks is good for the National Defense, he can present it 'without fear, partiality, favor or affection.' There are no restrictions on this whatever, except those manifest in any assemblage of gentlemen, viz: adherence to the subject; courtesy; constructive intent; and, in our conferences, parliamentary decorum."

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The Advanced Flying School, Kelly Field, Texas, gained nine additional Attack planes on August 2nd. Six were ferried from Barksdale Field by Colonel E.A. Lohman, Lieuts. Marshall Bonner, B.V.G. Scott, R.W. Osburn, E.F. Cullerton and W.D. Griffith. These officers were ferried to Barksdale Field in B-6's by Lieuts. Densford and Epler. On the same date Lieut. R.D. Butler ferried Colonel A.N. Krogstad, Majors R.N. Ott and C.C. Nutt to Maxwell Field in a C-14 where they picked up three A-12's. These planes will be used to augment the equipment of the Attack Section of the A.F.S.

NEW AIR FIGHTERS AT SELFRIDGE FIELD

Army Air Corps pilots of the GHQ Air Force at Selfridge Field, Mich., are conducting extensive tests on two brand new aerial fighting airplanes, the performance of which eclipses by far anything heretofore experienced in America.

The first of these Pursuit planes to be received, the XP-36, manufactured by the Curtiss Aeroplane Company, has already been judged valuable to the extent of an order by the War Department for 210 of its type for GHQ Air Force units; and the second, the P-35, manufactured by the Seversky Aircraft Corporation at Farmingdale, Long Island, is the forerunner of 77 like airplanes already being manufactured for the three squadrons now at Selfridge Field. These three squadrons are now equipped with the Boeing P-26 which, though badly outclassed by its brothers, was in itself a short three years ago a revolutionary design. Upon arrival of the new aircraft, it is expected that the planes now in use will be transferred to Army flying schools, other Pursuit units, or to forces in Hawaii and the Panama Canal Zone.

Both of the new fighters are single-seater low-wing monoplanes, and of much the same general appearance. Each is equipped with retractable landing gear, landing flaps, and very powerful twin-row radial engine. The familiar blue-and-yellow of the planes of the Army Air Corps is missing, as both are finished in the aluminum sheen of unpainted metal.

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NEW COMMANDING OFFICER FOR BROOKS FIELD

Major Douglas Johnston, Air Corps, recently took over the duties of Commanding Officer of Brooks Field, Texas, succeeding Lieut. Colonel Henry J.F. Miller, Air Corps, now in command of the San Antonio Air Depot, Duncan Field, Texas.

At a formation of the troops of Brooks Field, Colonel Miller formally bade the men farewell and relinquished the command to Major Johnston. The Colonel was presented the Army League football trophy, won by the Brooks team in the season just past, as a token of remembrance and thanks for his interest in sports while he was Commanding Officer.

Prior to taking over the command of the field, Major Johnston was Executive Officer of the post, and has been at Brooks Field since September 24, 1935. He is a graduate of the Air Service Balloon and Airship School, class of 1924. He completed the Advanced Course at the Coast Artillery School in 1928, and the Field Officers' Course at the Chemical Warfare School in 1936. In 1929, he graduated from the Air Corps Tactical School. He holds the flying ratings of Airship Pilot, Balloon Observer and Airplane Observer.

NEW FIRING METHODS BY PURSUIT

During the period from July 1st to 25th, last, while the 94th Pursuit Squadron, stationed at Selfridge Field, Mich., was occupying the Aerial Gunnery Range at Camp Skeel, Oscoda, Mich., the traditional method of aerial gunnery practice by Pursuit pilots was suddenly amended to include practice in mass firing on ground targets in units of three, six and twelve aircraft, all firing simultaneously. After two weeks of practice in the new method of air firing, pilots of the 94th Squadron were called upon to demonstrate this method to the Commander of the Second Wing, Brigadier General Gerald C. Brant, during his inspection of the 3rd Air Base, July 29-30.

This mass firing was performed from the tactical air formation developed at Selfridge Field during the past two years, that is, the firing was actually done with each flight of six P-26 Pursuit planes flying in elements of two ships each, with elements staggered to the rear alternately to left and right of the leading element.

This formation parallels a system of formation flying and aerial gunnery developed at Langley Field in the past several years, which is known colloquially as the "string" formation. The News Letter Correspondent believes that studies are being made by high command as to the relative effectiveness of the two differing systems of Pursuit mass firing.

The statement of the Acting Squadron Commander, 1st Lieut. Paul B. Wurtsmith, covering the period of change in gunnery methods, is as follows:

"Work began promptly on Tuesday, July 6, 1937, after the Fourth of July holidays. Pilots were up and ready to fire at 5:00 each morning. We fired right through each day until 9:00 a.m., when the air started getting too rough to fire. Some of the older pilots who had fired the course previously, started right off with a high percentage of hits, sometimes making the maximum number. The younger pilots who had never fired before were quite puzzled for a few days because they were not getting so many hits, but they soon caught on and were picking up rapidly. The attached pilots started off making such good scores that they immediately commenced their record fire. The three of them had practically finished the course when Captain Dawson went on leave and 1st Lieut. Wurtsmith assumed command.

"The next change was an order from the Group Commander, directing that all individual firing cease at once, except those shooting record, and that emphasis be placed on Mass Firing by flights and by squadron. This order, received on July 13th, caused quite a change in the whole set-up. Those firing record, the three attached pilots, were rushed through the course - however, they came out with excellent scores. The range detail rapidly started work on the new 12 by 60-foot target for mass firing. Within three days our new range had been set up, all guns were bore-sighted at 1500 feet, and sufficient individual long range practice phases had been carried out to warrant the beginning of flight firing. Our time in camp had been extended from July 21st to the 25th, to allow sufficient time for try runs to train those pilots who had never fired in formation.

The 94th two-ship element formation was used and tested exclusively to a great advantage. Theflights started right off getting a high percentage of hits, much sooner than was expected. The two flights ran neck and neck for high score - the average of both flights being about 37% hits per number of rounds fired. Sometimes a flight would shoot as high as 43% hits. This flight practice was carried out for a couple of days, and then squadron practice began. Not much difference in firing was noted, except more care and precision had to be executed in formation work. The squadron did exceptionally well in this phase.

On the whole, the new type gunnery training was very enjoyable and successful at Oscoda. Both the men and officers showed a mighty fine spirit throughout the entire course. Swimming, boating, fishing, tennis and ball playing were the major sports enjoyed by everyone. The fishing stories are by far too numerous and erratic to relate. However, on July 24th the whole command returned to Selfridge Field with the feeling of a job well done."

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FISH STORIES FROM ALBROOK FIELD

"Fishing has been extremely good around the Pearlas Islands for the last six weeks," says the News Letter Correspondent, "and all of Albrook's intrepid fishermen have been having their day.

Recently a party, including Major General David L. Stone, Commanding General of the Panama Canal Department; Brigadier General George H. Brett, our own Commanding General; Colonel W.B. Meister; Major W.H. Styer and Captain F.N. Leakey spent several enjoyable days in the Pearlas Islands group and had real fisherman's luck. After the party had hooked several 100-lb. sailfish, General Stone had the thrill of a fisherman's lifetime when he hooked a 250-lb. marlin. After a two-hour battle, the game fish was finally brought to gaff. At this point, while perched precariously on the rail to take a candid shot with his camera, General Brett lost his

(Continued on Page 5).

COMMENCEMENT EXERCISES OF AIR CORPS ENGINEERING SCHOOL

THE annual commencement exercises of the Air Corps Engineering School were held at the Wright Field Auditorium at 11:00 a.m., July 30th. This was the seventeenth commencement of the organization, and ten student officers received certificates of graduation. The usual brief ceremony marked the occasion.

Brigadier General A.W. Robins, Chief of the Air Corps Materiel Division, and Commandant of the Engineering School, delivered the only address and distributed the certificates to the graduates.

General Robins pointed out that the Air Corps Engineering School is the smallest in number of students of any of the Air Corps schools. As a result, student officers for this School were among the most carefully selected groups in the Air Corps. Records of all applicants were examined, and only those believed to be especially adapted to the engineering work were given consideration. Under this condition, there is small question as to the ability of the student to pass the examinations, as all are bound to come out well. In the present class the grades were found to be high, with a very small range between the various students. Leaders of the class, therefore, are privileged to feel especially proud of their records. Each officer graduates with the rating of Aeronautical Engineer.

"Nowadays," said General Robins, "there is some question as to just what the term engineer includes, as in a broad sense it might be applied to almost every trade or profession. It is well for the modern aeronautical engineer to be a specialist in some line. He must not allow his viewpoint to become narrowed for that reason, but should maintain a broad interest in all the branches of aeronautics.

As to the future of aviation, there is no question. If the advance is as rapid in the next ten years as it has been in the last five, we may even be flying to the moon. The role of aeronautical engineer, therefore, is becoming more and more important. Formerly, the 'hot pilot' was the person most in demand, especially in the tactical units. The present needs of the tactical units, however, include a knowledge of radio, of mechanisms, and of structures.

In the present class, the majority of the officers are receiving assignments at the Materiel Division. These officers are peculiarly fortunate in that they have an opportunity to fly the most advanced equipment received by the Air Corps."

In concluding his remarks, General Robins congratulated the wives of the graduates, giving them credit for the excellent grades received by their husbands in this course. "No officer could achieve such grades," said General Robins, "with a wife who was continually nagging him or finding it necessary to be perpetually amused." He warned the officers to regard their graduation as a beginning rather than as the end of learning, as experience must be added to study for complete success.

Of the ten Air Corps officers who graduated from the Engineering School, six were assigned to duty at the Materiel Division, viz: Lieuts. E.H. Beebe, H.G. Bunker and L.E. Massie with the Aircraft Branch; Captain J.G. Moore with the Engineering Section, Lieut. S.O. Redetzke with the Power Plant Branch, and Lieut. H.H. Tellman with the Equipment Branch.

Captain R.E. Culbertson was assigned to the Fairfield Air Depot and Lieut. T.B. McDonald to the San Antonio Air Depot.

Lieuts. D.J. Keirn and Donald L. Putt have another year of study ahead of them on the subject of Aeronautical Engineering, the former being under orders to pursue the course of instruction at the University of Michigan and the latter at the California Institute of Technology at Pasadena.

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Fish Stories from Albrook Field

(Continued from Page 4.).

balance and in he fell. Being quickly hauled out of the shark-infested water, General Brett was none the worse for wear save being drenched from head to foot. Other fishermen who have been having the time of their lives are Lieut. Goodrich, from France Field, who with a 150-lb. sailfish to his credit has the record catch of the season; Lieut. Edgar Sirmyer, who also marked up his first sailfish, and Lieuts. Algert and Long, who have been giving the Tarpon at Madden Dam an awful run for their money."

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ANOTHER RESERVE PILOT JOINS PAN-AMERICAN

Albrook Field, Panama Canal Zone, lost one of its popular young bachelor Reserve officers recently when Lieut. Allen Sewart accepted a position with Pan-American Airways.

"While on a recent flight," says the News Letter Correspondent, "we saw Sewart busy at work in Brownsville and enjoying his new position very much. We hate to lose him, but wish him the best of luck in his new position."

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NEW SCIENTIFIC KNOWLEDGE ON THE SUN

An announcement made several days ago by Harvard University reveals a new discovery by Major Albert W. Stevens, Air Corps, as member of the Hayden Planetarium-Grace Eclipse Expedition. At a conference of astronomers at Harvard University disclosure was made of the first definite proof that the solar corona is not made up chiefly of flaming coronal streamers alone, as has been supposed, but is an even, globular blanket covering the sun more than a million miles deep.

Photographs leading to this finding were taken from an airplane in the substratosphere off the coast of Peru during the eclipse of the sun on June 8th, last, under the direction of Major Stevens.

All of Major Stevens' plates clearly show a perfectly even corona surrounding the sun, at a depth considerably greater than the diameter of the body. His photographs include eleven pictures with a 24-inch camera, four pictures with an 8¼-inch camera, and 150 feet of motion picture film made with a 6-inch lens.

The usual familiar coronal streamers, which have completely dominated eclipse photographs taken from the ground, and which have absorbed most of the scientific attention up to now, appear on the new plates as relatively insignificant bright tracery in the immense globular envelope.

While the great altitude of 25,000 feet at which Major Stevens worked made his observations very difficult from the point of physical discomfort, it was largely because of this height that he made his finding, according to Dr. Harlow Shapley, of the Harvard Observatory. In the substratosphere he had the advantage of being above about two-thirds of the earth's atmosphere, where dust particles and air molecules give relatively small trouble in photographing difficult subjects like the solar corona.

It is probable that the finding will affect the traditional method of eclipse observations, leading astronomers to make more use of airplanes to carry their instruments up into the substratosphere. Further analysis of the structure of the globular corona must wait until the next favorable eclipse in 1940 over South America and South Africa, when scientists can study the phenomenon through ultra-violet lens systems and the spectroscope.

Dr. Donald H. Menzel, Harvard's authority on solar phonomena, and leader of the Harvard-Massachusetts Institute of Technology eclipse expedition to Siberia last year, voiced the belief of the conference that Major Stevens' finding is "of great importance and will have an immediate bearing on the interpretation of the structure of the Sun's upper atmosphere."

Guided by their knowledge of the globular corona, the astronomers checked back and found that the phenomena was recorded on the Harvard totality photographs of last year, although by no means as clearly as on the substratosphere photographs. Earlier indications of the globular form of the corona has been obtained by the European astronomers Bergstrand and von Klueber, but the full appreciation of the nature of the corona was not reached until Major Stevens' photographs brought out the phenomenon more clearly than heretofore.

A possibility that the spectacular appearance on Major Stevens' plates was caused by photographic or optical defects or by the action of minute ice particles in the stratosphere has been ruled out by rigid tests at the Eastman Kodak Company and the Institute of Optics of the University of Rochester, N.Y.

Reports of examinations of the Stevens negatives were presented to the Harvard conference by Dr. Kenneth Mees and Dr. Walter Clark, of the Eastman laboratories, and by Dr. Brian O'Brien, of the Institute of Optics, a summer lecturer at Harvard. Their experiments were accepted as conclusive that Major Stevens had photographed a natural phenomenon. The astronomers considering the evidence numbered fifty scientists from a dozen different American observatories.

Major Stevens flew to Harvard last week from Wright Field, Dayton, Ohio, where he is stationed, to confer with the astronomers, assembled there for the annual summer "hollow square" discussions sponsored by the Observatory.

Harvard scientists commented on the fact that two of the most significant observations of the 1937 eclipse were the work of amateur astronomers. Their reference was to Major Stevens, who is one of the Army's best known experts in stratosphere flight and aerial photography; and to Sr. Fernando de Romana, a Peruvian amateur astronomer, who utilized Harvard equipment in June to obtain the best photographs of the corona ever made in polarized light.

As a highlight of the scientific announcement, the astronomers pointed out that Major Stevens' important results were unexpected and essentially accidental. As one of the many field workers in the Hayden Planetarium-Grace Expedition, directed by Dr. Clyde Fisher, of the Hayden Planetarium, N.Y., Major Stevens was primarily interested in

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"AND I LEARNED ABOUT FLYING FROM THAT."

THE "deadly tailspin," cause of many training crashes and deaths during the feverish training for flying over the lines during the World War days is still with us. Sired by Old Man Gravity out of Stall, conception and gestation are remarkably brief, and the malignant Imp is born with almost no warning of impending labor.

Thus it was over Galax, Virginia, on July 6, 1937, in one of the GHQ Air Force's newest YB-17's. On this occasion the flier's best friends, Altitude, Presence of Mind and Skill robbed the Imp of its evil intent, and the incident passed off with one successful parachute jump, a few bruises, some relieved feelings and numerous valuable lessons.

On the day in question, one of the YB-17's procured for service test and piloted by 1st Lieut. William C.Bentley, Air Corps, was securing performance data at 14,000 feet, under conditions of high loading and low speed. The airplane was flying above an overcast and through broken clouds on the automatic pilot when suddenly, with no warning whatsoever, the airplane did a snap half roll to the left and continued into a left spin. During the half roll, Lieut. Bentley turned off the automatic pilot and took the controls. The wheel and rudder were both in the full right position, showing that the automatic pilot had reacted to the roll and was endeavoring to level off the airplane.

Let us continue with the words of various members of the crew. Lieut. Bentley states:

"The throttles were immediately closed and after an estimated turn and a half spin, level flight was resumed by utilizing turn and bank indicator, airspeed, rate of climb and altimeter. The gyro flight instrument was out, having hit the limiting pegs. Level flight was resumed at 11,000 feet and held for a few minutes until an open spot was encountered and, in this, the ship was tested for stability, flying qualities, etc. The airplane handled normally in every respect from 90 MPH to 140 MPH, and the gyro pilot was found to function perfectly."

Captain McDaniel states:

"On the flight described, I was seated in the co-pilot's seat performing the duties assigned to the co-pilot. Just prior to the spin there was no loss of altitude, no change in the airspeed, no indication of 'mush' on any of the instruments or by feel, no vibration, or indication of motors laboring, no airplane or control or wing flutter and no indication or warning of any kind of an approaching stall. The plane simply started a rapid bank and then turned to the left without the nose dropping first and continued on into the left spin. As the wings approached vertical, the nose started down and continued to fall at such a rate as to prevent my being thrown against the safety belt. At no time did I feel any pressure on the belt. I did nothing to the controls until the pilot had closed the throttle and then I changed the propellers to high pitch, to help prevent racing the motors. The controls responded perfectly and smoothly and without delay when the pilot applied them to stop the spin, and the pull out of the dive was very smooth and gradual so that there was practically no 'heavy' feeling or very little tendency to be pushed deeper into the seat. Nor was there any tendency to be thrown to either the right or left side of the seat."

Other members of the crew experienced strong acceleration forces which made it difficult for them to move about in the airplane during the spin. Lieut. Ragsdale states:

"I was lying on the forward gunner's platform reading the Handbook of Instructions when the airplane snap-rolled to the left. Having been thrown into the Bomber's control panel and down on the floor with great force, I immediately operated the bomb-bay door lever to 'open' and put on my parachute, which was on the floor. I crawled back to the emergency door which I found difficult to open. Private Shealey pulled the emergency release and I pushed the door open. Shealey then bailed out. I did not get out, as the airplane was recovering from the spin. My right hand was slightly cut while opening the door."

Hind sight is better than fore sight, but it is through the study of accidents or near accidents in which the participants live to tell their stories that we increase our knowledge of flying. In this case the airplane was so heavily loaded that for the high altitude and low airspeed, it was flying near a stall. A slight gust or possibly a little ice was sufficient to complete the stall, and the YB-17, which flies easily and as normally as any other airplane, responded by dropping off into a spin. The automatic pilot, not as yet designed to nose and rudder into a spin, did the best it could, which in this case, of course, merely accentuated the spin. The pilot's reactions left nothing to be desired. He immediately disconnected the automatic pilot, took manual control himself, and through his skill in instrument flying, soon leveled off - not, however, until after 3,000 feet of altitude had been lost.

Most large airplanes, military and commercial, are nowadays equipped with automatic pilots, and their use on long flights and when on instruments is standard practice. They are a marvelous aid to air navigation. They assist in bombing. They perform with a high degree of reliability the functions for which they are designed. They are not now designed to pull an airplane out of a spin, but it is possible that some day some bright mind will invent an automatic pilot which can recover from a stall.

Lessons to be learned:

(1) Disconnect the automatic pilot and fly by hand:
  a. In extremely turbulent air;
  b. When wing de-icers are operating;
  c. In climbs or straightaway flight near stalling speed;
  d. When power output on one or more motors is below standard.

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AERIAL PASSENGER SERVICE ON SHOE STRING

A citizen of San Jose, Costa Rica, recently wrote a letter to the Chief of the Air Corps, the translation of which is as follows:

"At the suggestion of Captain A.C.Reed of the Navy Department of Aeronautics, to which I wrote before, to direct the present letter to yourself, I now write.

I desire to know if that department does not wish to sell one of its dirigibles which is not in service or which it is retiring from service in usable condition.

The Navy Department was not able to favor me in this matter, because they say they had very few of these ships. The Goodyear Company gave me the same reply. I have no money to make this negotiation, because I have available only $25 but sometimes that department might sell me one of its old dirigibles cheap and give me the opportunity to pay for it in installments.

It is possible that I may establish a passenger service in this country with this dirigible as a means of transportation. In this matter I believe I will do well."

The writer of the above letter adds that it is his understanding that some few years ago the War Department sold a large semi-rigid dirigible for a small sum and wants to know if that airship was in usable condition.

Ed. Note: It was not. The only thing of value on this dirigible was the aluminum keel, and this could only be sold as junk.

A PERFECT FORCED LANDING - ALMOST.

It seems that in flying the pilot gets a tough "break" now and then just after everything looks "rosy" for getting safely out of a mess. A Reserve officer down in Panama, confronted with a forced landing when the engine went dead while flying over a jungle, appeared in a fair way to escape from his predicament with flying colors when a pesky telephone guy wire "gummed up the works."

While blithely doing acrobatics at 4,000 feet and recovering from a slow roll, Lieut. R.T. Black, Air Reserve, in a P-12E, found his engine had cut out completely. Thinking very little about it, as it is an old habit for P-12's to do just that after inverted flight, he started gliding down, expecting the engine to pick up any minute.

For 3,000 feet he tried everything in the book to get the engine started, but to no avail, and a quick glance for a field revealed nothing but jungle, and his only possible landing spot was the National Highway. Getting a straight shot at the highway, he squeezed down between 150-foot trees which lined the road on either side, but just as he was about to ease it onto the concrete the right wing cut through a telephone guy wire, throwing the ship around enough to wipe off the landing gear upon landing.

The airplane then skidded along on its belly for about 75 feet, coming to a stop just off the edge of the road, with no injury to Lieut. Black and the plane damaged to such an extent as to require an overhaul.

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New Scientific Knowledge of the Sun

(Continued from Page 6).

getting high enough to photograph the spectacular course of the moon's shadow as it raced along the earth and cloud tops.

His observations were made near Lima, Peru, in a Pan American Grace Airways plane, piloted by Captain Charles Disher and co-pilot W.E. Gray. Assisting in the difficult task of conducting accurate photography at an altitude where man commonly becomes unconscious or overpowered by lassitude, was W.O. Runcie, a photographer, of Lima.

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The regular Control Area Supply and Engineering Conference and Luncheon, held quarterly at the San Antonio Air Depot, Duncan Field, Texas, took place on August 3rd, and was attended by about fourteen officers from the various Air Corps stations in the Control Area, in addition to the officers of the San Antonio Air Depot.

THE BLUE AND GOLD CLUB OF LUKE FIELD

By Lloyd D. Miller

The Blue and Gold Club of Luke Field, T.H., which has given the soldiers of that station the equivalent of a university extension lecture course for the past year and a half, sponsored its last program for the summer on July 25th. It will reopen in the fall, on September 19th, with election of officers, and a suitable guest speaker will be selected for the occasion.

With regard to the professional and cultural activities of the Club, Lieut. Colonel Milton E. Beebe, Chaplain at Luke Field, stated that he had never known any university lecture course that had offered such a wide scope of subjects under such impressive and outstanding speakers.

The Army, the Navy, the University of Hawaii, the Honolulu Art Academy and the leading professional men of Honolulu all contributed to the splendid program of the Air Corps society.

Mr. Walter R. Coombs, Dean of Scottish Rite Masons in Hawaii, delivered on July 25th a masterful interpretation of the extent of Masonic work in Hawaii and on the mainland. With impressive speech, he expanded the beautiful background of Scottish Rite Masonry.

On July 18th, Brigadier General Barton K. Yount, Commanding General of the 18th Composite Wing, dwelt on his experience as military attache to the U.S. Embassy in Paris at the time of Colonel Lindberg's solo flight across the Atlantic. This talk also emphasized the growth of professional pride in the Air Corps by one of its outstanding leaders.

The religious development of the Club had an outlet in the appearance of Lieut. Colonel C.J. Bell, of the Salvation Army, with his Girls Band of 25 pieces. Prayer, religious talks of Colonel Bell, songs of worship and a band program provided an evening of worthwhile enjoyment to over 150 soldiers of the field.

Another notable program was one where Mr. J.M. Whitenack, of Honolulu, kamaaina sportsman, who is a lecturer of potent humor, flashed on the screen the best original colored slides of royal funerals of Hawaiian monarchs and of inaccessible craters and trails of the eight islands that have ever been produced.

A purely cultural lecture, which stressed the beauty of Oriental Art, was given by Miss Alyce Hoogs, instructor in that subject at the Honolulu Art Academy. She illustrated her talk with many fine pictures of both Chinese and Japanese art and interested many of the military personnel in a subject which had never been understood or appreciated before her informative remarks.

Mr. E.H. Bryan, Curator of the Bishop Museum, covered the wanderings of the Polynesians in an ethnological lecture: "Whence the Polynesian?" In his descriptions of the Polynesians, he showed the reactions of personal visits to most of these islands and interested the soldier in the South Seas and their original colonizers.

Chief Blaisdell, of the Honolulu Fire Department, dispatched five of his troubadors on an eventful Sunday evening, in which Hawaiian songs and string music entertained the Army flyers. These native Hawaiians almost coax their old Kahunas (witch doctor's enchantment) out of their steel guitars at times.

Warden Luckie, formerly a Lieut. Colone of the Medical Corps, U.S. Army, spoke of the present treatment of prisoners and their development in Oahu Territorial Prison of which he is the head. When it is known that the value of the agricultural products ran over $20,000 last year, it can be said that Warden Luckie has in Oahu Prison an institution which is producing.

Chaplain Milton O. Beebe, who has acted as critic of the Blue and Gold Club, sails for the mainland on September 10th, next. His probable successor, Chaplain Albert F. Vaughan, it is believed will lead the Blue and Gold in its coming activities. Lloyd D. Miller, who has worked with Chaplain Beebe as Chairman of the Program Committee of the Blue and Gold Club, will assist Chaplain Vaughn for a few months before his return to the mainland.

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P-26A's IN THE PHILIPPINES

Touching on the receipt of a consignment of new (to them) P-26A airplanes, the News Letter Correspondent of Clark Field, P.I., states that the 3rd Pursuit Squadron is now speedily surveying its P-12B's, C's and D's, and adds:

"In a former News Letter the Correspondent pessimistically predicted that the P-26A would limit our small and strange field operations, but after two months' experience we find that we can operate without difficulty in all except a few of the unimportant fields. The Philippine Bureau of Aeronautics, under the able guidance of Major Harvey Prosser, has done wonders in clearing good fields in even the most remote sections of the Southern Islands. Captain Van Meter, 1st Lieuts. W.M. Canterbury and R.A. Legg have just returned from a five-day Southern Island flight and report that the P-26A is admirably suited for the Southern Island flights.

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Regular contributions to the columns of the News Letter from Wheeler, Chanute, Nichols and Patterson Fields would be greatly appreciated, as well as from the various Air Corps National Guard and Reserve organizations.

WHAT TO DO WITH OLD AIRPLANES

In a recent issue of the aeronautical magazine, THE AEROPLANE, London, Eng., "Babs" writes very entertainingly on the subject of finding some happy solution to the problem of providing a proper place for airplanes which have outlived their usefulness in military and commercial aviation. His dissertation is as follows:

"My Dears,-

The other day I was at a certain airport, and I got talking to a dear old air-liner who had just come in. I thought she was looking rather the worse for wear, so I asked her if she found her work too much of a strain.

"Well," she said, "I won't deny that I do sometimes feel a bit worn out. My pilot and the mechanics are very kind to me, but it's no good - I'm not so young as I was."

"Couldn't you retire?" I asked. "After so many years of faithful service, I'm sure your company would want you to have a happy old age."

"I wish I could," she replied, with tears in her eyes. "But where could I go to? No, Babs, there isn't any rest for old aeroplanes till the day they're broken up. So I shall just have to carry on somehow as long as I've got my C. of A."

I did wish I could help her....and then it occurred to me that she isn't the only old aeroplane who is having a bad time. All over the country there must be hundreds of others, civil and military types, who ought to have given up service long ago, but who haven't been able to, partly because they've not been replaced, and partly because there's *simply nowhere for them to go*.

Then suddenly I had an idea. How wonderful it would be, wouldn't it?, if there were an aerodrome specially for old aircraft....a happy home where they could enjoy their obsolescence away from the turmoil of modern airports and R.A.F. stations!

I was so thrilled with the idea that I dashed off to consult two Air Force friends of mine - a Bomber and a Fighter.

At first they were rather sceptical.- "It would be all very well for civil types," said the Bomber, "but peace and quiet isn't *my* idea of a happy old age. I'd far *prefer* to go to Spain and have a real fling."

The Fighter burst out laughing.- "Yes, I know you would!" she said. "I hear you've been practising the Right Wing salute in case you get the chance to go. But actually I quite agree with you. We get enough hanging about when we're young in the Air Force.

"I'd love to fire away at some wicked B--------s. It seems to me only editors can do that in this country. All the same, I think Bab's aerodrome would be splendid for old air-liners and trainers and light aeroplanes; but it would be better not to admit old military types at all. At least I know that civil types don't get on at all well in the same works as military aeroplanes."

"What about balloons and airships?" asked the Bomber.

"Oh, they would never fit in either," went on the Fighter. "I know! You ought to put up a notice at the gate, 'No Hawkers, No Circulars.'"

"It would be nice to have a lake for old seaplanes and flying boats," I said. "I wonder if we could arrange to take over Gatwick."

"If elderly aeroplanes are to feel really at home," said the Bomber, the hangars oughtn't to be too modern. None of this newfangled concrete and chromium. My first hangar was made of yellow brick and corrugated iron. And oh! it was such a homely old place."

"What would the aeroplanes *do* all the day?" enquired the Fighter. "They'd be miserable if they had nothing to do."

"There would be plenty for them *to* do!" I said triumphantly, "that's *one* of the chief points of the scheme. They would serve the sacred cause of Publicity - giving free flights to the Dear Big British Public.

"There are masses of people who haven't ever flown, and who would soon become air-minded if they got the chance to go up free. I wouldn't worry them if the aeroplanes were old - they'd be far too thrilled at getting off the ground. It would be a really practical and useful form of publicity."

The Bomber looked rather suspicious.- "But would the old aeroplanes be safe?" she asked. "It wouldn't be good publicity if they went crashing about all over the place."

"They'd be safe all right," I told her. "You see, they would be well looked after on the ground, and as a rule they would only go on very short flights. Besides, if they did go further afield they'd always be given enough petrol to get them back to the aerodrome."

"That would be a nice change for some of the air-liners!" said the Fighter.

"Isn't it all going to cost rather a lot?" asked the Bomber.

"I've figured it out," I replied. "There would be the cost of the aerodrome, compensations to the owners of the aeroplanes and the running expenses. It needn't come to so very much; and, anyway, nobody would notice an extra naught on the end of the Air Estimates."

"The only thing I'm worried about," I continued, "is how to get the Air Ministry to take up the idea."

"That's easy!" exclaimed the Fighter. "You've only got to mention the scheme in THE AEROPLANE and it's as good as adopted. There was a man from the Air Ministry down here last week, and he told my pilot that Lord Swinton always has his brainwaves on Fridays."

"I must say I'm glad I'm not Lord Swinton," said the Bomber. " think his job sounds most uncomfortable. I've heard that he's tied down with red tape and absolutely wrapped up in White Papers."

"Yes, I know - " the Fighter exclaimed. "And *how* can one expect a quick Expansion in *those* conditions!"

"I'm afraid I must go now," I said. "There are several aeroplanes waiting at the office to see me. But thank you both very much for your helpful advice. I shall launch my idea in THE AEROPLANE and await results."

"Good-bye!" they both called after me. "And good luck to the scheme!"

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SCHOOL OF AVIATION ORDNANCE TO BE STARTED

Spectators at the public bombing and gunnery exhibitions of the GHQ Air Force which are held occasionally at Plum Tree Island, Va., and Muroc Dry Lake, Calif., are always thrilled by the downward drop of the death missles and the curving trajectories of the machine gun tracer bullets. They respond with enthusiasm to the detonations and dust clouds that follow each bombing salvo.

But how many of them realize the amount of patience, skill and back-breaking labor that go, without a murmur, into the loading, fuzing and delivery of the blunt nosed death messengers?

All of the preliminary work at the six air bases of the General Headquarters Air Force, except the actual loading of the bombs into the airplanes, is performed by the six platoons of the Tenth Ordnance Service Company, commanded by Lieut. Colonel Russell L. Maxwell, Ordnance Department. The headquarters and the First Platoon of the company is stationed at Langley Field, Va.

To further the training of these Ordnance enlisted men, the School of Ordnance Aviation has been established at Langley Field. The object of the School will be to give initial training intheir assigned duties to the enlisted men of the six GHQ Air Force Ordnance platoons.

This is a special project of the Tenth Company, organized last January by the War Department on the recommendation of Major General Frank M. Andrews, the commander of the GHQ Air Force. Colonel Maxwell has selected Captain Edward P. Mechling, Ordnance Department, as the school director.

Enlisted men will come to Langley Field by air from all over the GHQ Air Force to study under the guidance of some of the outstanding Ordnance specialists on the Atlantic coast. One student each will come from March and Hamilton Fields, Calif.; Selfridge Field, Mich., Mitchel Field, N.Y., and Barksdale Field, La., and four from Langley Field.

Three sessions will be held in the 1937-1938 school year, with classes beginning in October, January and March. An entirely new group will comprise each class. There will be no school in December. The final course will be completed in April to enable the Tenth Ordnance Company to be 100% available for the spring exercises of GHQ Air Force units.

Captain Mechling comes here from the directorship of the Automotive and Military Departments of the Ordnance Field Service School, Raritan Arsenal, N.J. He states that the Aviation Ordnance students will have a very intensive scholastic schedule, compressed as it is in two months. Nearly eight hours a day will be spent in the class room.

Work will not be limited to the classroom. Every Ordnance facility of Langley Field, the largest air base in the Army, will be at the disposal of the students. Langley Field has a well equipped Ordnance warehouse.

The only subjects taught will be those dealing directly with Aviation Ordnance. These will include theoretical and practical training in the storage of bombs, fuzes, pyrotechnics, small arms, ammunition and machine guns. Subjects of principal interest will be small arms and ammunition.

In addition to Captain Mechling, the faculty will include Mr. Thomas Gaines, of Langley Field, instruction in ammunition inspection and storage and surveillance; Technical Sergeant Robert Tokely, formerly of Raritan Arsenal, N.J., who will teach "Ammunition, General." at the Langley Field School and Staff Sergeant George Amold, the instructor in "Small Arms."

Implements of warfare that will be taught at Langley Field next autumn are the .30 caliber rifle, the .45 caliber automatic pistol, pyrotechnic projectors, Browning aircraft machine guns of the .30 and .50 caliber types, Browning machine gun for ground service of the .30 caliber type, the Winchester and Remington shotguns and the .22 caliber rifle.

Explosives and ammunition used in the military service will form an interesting part of the curriculum. This will embrace small arms, trench mortars, aircraft bombs and artillery ammunition in the introductory phase of the sub-course.

In low explosives the group will delve into smokeless, rifle, black and ballistite powders. TNT or trinitrotoulene is one of the many high explosives the students will handle gingerly during their studies. Even blank ammunition, the variety used on national holidays and to salute living and deceased officials, will come under the scrutiny of the Ordnance men.

Forced down airplanes use signal pistols to call for help. Flares are used in night landings in isolated regions. The study of this subject is known as pyrotechnics.

Other subjects concerning which instruction will be given at Langley Field are General Storage, Chemical Bombs, Surveillance, Transportation, Issues of Property, Accounting for Property and Storage and the Issue of Ammunition.

It is expected that this experiment in military education will be watched with interest by Major General W.H.Tschappat, Chief of the Ordnance Department of the Army.

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FLIGHT FROM PANAMA TO RANDOLPH FIELD

Air Corps officers and enlisted men from Albrook Field, Panama Canal Zone, under the command of Lieut. Colonel B.G. Weir, recently made an extended flight to Randolph Field, Texas. Pilots of the planes were Major W.N. Reid, Captain Charles T. Myers, Lieuts. William C. Dolan, D.F. Callahan, Max H. Warren and Technical Sergeant Paul D. Jackson.

"Encountering excellent weather and slight tail winds, the flight made good time to Managua, Nicaragua, where we landed to refuel," says the News Letter Correspondent. "Dame fortune continued to smile as our reports indicated excellent weather to Guatemala City, where we landed about 3:30 p.m. Friday afternoon, having put ourselves 1,000 miles nearer our goal, Randolph Field. The next morning bright and early we were off for our long hop to Vera Cruz, Mexico. The pass crossing Mexico's narrowest point at Minatitlan being closed forced us to go over the top, but once reaching the Atlantic coast we again hit fair weather, and four hours and a half after leaving Guatemala we landed at Vera Cruz. It was here that our plans hit the first snag and our hopes of reaching Randolph Field that day were rudely interrupted. While taxying out to the end of the runway, the first ship to take off hit some very soft ground and managed to get stuck up to the hub. After two hours of using every theory advanced (many in number) we succeeded in getting the ship first out of one hole into another until we were finally on firm ground. Our problem then was to get off the other runway which not only being short was about 45° cross wind. Throwing out lift by the handful all ships got off OK, and we were on the way to Brownsville, where we landed two hours later, and after clearing the customs we were off for the hotel and bed. The next day being Sunday, and the trip being short, we decided to make a rather late take-off, and twelve noon found us at Randolph Field, the end of our journey."

It was at this point that the only mishap of the entire round trip flight occurred. Lieut. Jack Price, flying a Bombing plane, was just preparing to return to Randolph Field after a short flight when both motors cut out without warning at 600 feet. Not having much choice he headed for the first available field and, had it not been for a row of mesquite trees, he would have gotten away with a perfect forced landing. As it was, the ship went through a fairly large mesquite. The damage to the ship, however, was slight, and it was flown out several days later.

After a ten day stay at Randolph Field, the problem was to obtain authority from the Mexican Government to enter Mexico, and with four days of being on alert authority was finally obtained, and on July 3rd the airmen took off for Brownsville. Immediately after arriving there, bad weather set in which forced them to remain in Brownsville over July 4th, finally taking off the next morning for Tampico, Mexico. Arriving at Tampico, it was raining slightly but increasing every minute, and a heavy storm was moving in fast. Two ships succeeded in landing, but as Lieut. Scott was coming in the deluge occurred and he had nothing to do but fly blind until he found a lighter spot in the rain. All of the ships, however, got in safely.

The following day, July 6th, saw the longest single hop from Tampico to Tapachula, Mexico. The flight took five hours to reach destination and, except for having to go over the top again when crossing the Isthmus at Minatitlan, the weather was fairly good. After clearing customs, the flight headed for Guatemala City. As it entered the pass about 30 miles from Guatemala City, the weather was closing in fast and raining lightly. So quickly did it close in that several planes had to return to Tapachula for the night. Having flown 6½ hours and serviced planes for three more, the airmen were a tired lot, and everyone was off to bed early.

July 7th beamed bright and clear, which was, indeed, a pleasant outlook for the long 1,000-mile jaunt ahead. After receiving weather reports, the airmen were in for another pleasant surprise, as the weather was perfect all the way to Albrook Field. Two and one-half hours after leaving Guatemala, landing was made at Managua, where the flight was joined by the planes which had returned from Tapachula.

On this leg the flying was at an altitude of 10,000 feet, in order to gain advantage of the winds aloft, and at this altitude one pilot, Lieut. Cy Kitchens, found his motor losing RPM's rapidly. Apparently the trouble was ice in the carburetor, but even putting his air heat control in the hot position the engine continued to lose RPM's until it had completely cut out. He was making for the nearest emergency field when at about 4,000 feet his motor slowly started, picking up until it was again functioning normally.

"Even though the surface winds were directly on our nose," says the News Letter Correspondent, "we climbed to 14,000 feet, where we had a light tail wind, enabling us to make Albrook Field in 3 hours, 40 minutes, for an average of just under 180 m.p.h. Some of we thin-blooded boys were nearly frozen stiff when he landed at Albrook, but we were all happy to be back after having been gone for twenty days."

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LIEUT. DENSFORD BRINGS HOME MORE TROPHIES

Firing in the Texas State Championship Pistol Matches at Laredo, Texas, July 17th and 18th, Lieut. Charles F. Densford - ace pistol shot of the Air Corps - was forced to be content with second place for the second time since his return to duty in Texas. His aggregate score for the championship was 1097, which was bettered by 5 points by Captain Charles Askins, of the U.S. Immigration Border Patrol, El Paso.

Captain Askins won the State Championship in 1936. However, Lieut. Densford brought home three new trophies and seven medals to add to his collection. The trophies included the Fort Worth Trophy, the L.L. Cline Trophy for rapid fire aggregate, and the Bettencourt Trophy for a rapid fire match. In this last match, Lieut. Densford tied the world's record - 195 out of 200.

Lieut. Densford does not plan to enter the National Matches this year, since there is no team from Kelly Field, and he is not eligible to compete on any other team.

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PERSONNEL CHANGES AT ADVANCED FLYING SCHOOL

Major Arthur G. Liggett has been relieved from command of the 63rd School Squadron and assigned to duty as Director of Ground School, Kelly Field, effective August 1, 1937. Captain Harvey F. Dyer now commands the 63rd, assisted by Lieut. Robin B. Epler, a recent arrival from the Panama Canal Department.

BOMBING TRAINING AT LANGLEY FIELD

The 1st Bombardment Squadron, stationed at Mitchel Field and commanded by Major Claude Duncan, and the 31st Bombardment Squadron, from Hamilton Field, Calif., and commanded by Major James Taylor, recently returned to their home stations after a week of intensive bombing training at Langley Field on stationary and moving targets.

The officers of the 31st Bombardment Squadron were ferried to Langley Field by transport planes. They were furnished enlisted crews and airplanes by the 2nd Bombardment Group. The planes were maintained and serviced with 20th Bombardment Squadron facilities.

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CADET HANDLES SITUATION LIKE VETERAN

Flying Cadet Charles W. Bicking, of the 21st Reconnaissance Squadron, Langley Field, Va., piloting a B-10B Bombing plane one morning recently, found that he was unable to extend one leg of the landing gear when he was making preparations for a landing. As a result, he and his companions, Sergeant Brewer, Private 1st Cl. Sprecher and Private Weyer found themselves in a rather uncomfortable situation. Radio communication was apparently cut off by the same trouble which placed the landing gear out of commission.

Upon learning of the condition of the plane in flight, the Commanding Officer of the 2nd Bombardment Group sent an A-17 airplane into the air and instructions were communicated to Cadet Bicking to proceed to the Middletown Air Depot for a landing. At that station the landing was made without the use of the landing gear.

The News Letter Correspondent states that much credit is due Cadet Bicking for the success of the landing and his coolness in handling a dangerous situation.

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NO MITCHEL TROPHY RACE THIS YEAR

Army Air Corps officials at Selfridge Field, Mich., recently announced that "circumstances have made it advisable" to cancel all plans to hold the annual Mitchel Trophy Race this year. Although plans for holding the event on September 18th were already well under way, Major Edwin J. House, commanding the 1st Pursuit Group, GHQ Air Force, ordered all preparations stopped. He stated he regretted very deeply that there will be no race this year, but that visitors to Selfridge Field who are interested in the training of the First Pursuit Group pilots would be most welcome at any time.

BIOGRAPHIES

LIEUT. COLONEL WILLIAM E. KEPNER

Colonel Kepner's career as an officer in the U.S. Army has been a very colorful one. This fact would be evident even to a most casual observer were Col. Kepner to take the trouble to display the various decorations, certificates, etc., in his possession. The decorations include the Distinguished Service Cross, the Distinguished Flying Cross, French Legion of Honor, Croix de Guerre with palm. In further recognition for his exceptional service in the World War, he received a citation from both the American Army and the French Army.

Colonel Kepner possesses four Air Corps flying ratings, namely, Airplane Pilot, Airship Pilot, Airplane Observer and Balloon Observer. He is a member of the mythical Caterpillar Club. He has piloted the two Navy rigid airships SHENANDOAH and LOS ANGELES and received part of his airship training on the ill-fated airship ROMA. For a number of years he has piloted the various types of semi-rigid airships of the Army Air Corps and participated in many extended cross-country flights therein. He participated in several National Elimination Balloon Races, three International Balloon Racesand in the first Stratoshpere Balloon Flight in this country. He served as safety pilot in the first successful flight of an airplane across the American continent where the pilot, Major Ira C. Eaker, Air Corps, flew solely by instruments and with no outside vision.

Born in Miami, Indiana, January 6,1893, Colonel Kepner enlisted in the U.S. Marine Corps in November, 1909, and was discharged four years later with a "Good Conduct Medal" as a reward. When National Guard regiments were Federalized for service on the Mexican Border, he was,on June 26, 1916, commissioned a second lieutenant, 2nd Infantry, Indiana National Guard. He was promoted to 1st Lieutenant on November 9, 1916. He was appointed a second lieutenant of Cavalry in the Regular Army on June 14, 1917, and promoted to 1st Lieutenant on the same date.

Transferred to the 4th Infantry on September 11, 1917, he served with his regiment in France in the Aisne Offensive, Champaign-Marne Defensive, Aisne-Marne Offensive, Chateau-Thierry Sector, St. Mihiel Offensive and the Meuse-Argonne Offensive. On October 5-6, 1918, near Cunel, France, while in command of a battalion, Colonel Kepner personally led one company of his command in an attack on a woods occupied by a company of German machine gunners. He was the first man to enter the woods and later, when part of the attacking company was held up by flanking machine-gun fire, he with a patrol of three men encircled this machine gun, and after a hand to hand fight put the gun out of action.

After the Armistice, Colonel Kepner served as Operations Officer, 4th Infantry, at Plaidt, Germany, for six months, and as Executive Officer, Headquarters troops, Coblenz, Germany, for five months.

Colonel Kepner started his career in the Air Corps in October, 1920, when he was detailed as a student to take lighter-than-air training at the Army Balloon School at Ross Field, Arcadia, Calif. He graduated therefrom on April 25, 1921, and was rated a Balloon Observer, May 9, 1921.

After commanding the 1st Balloon Company at Ross Field from April 26 to May 12, 1921, he was transferred to Camp Benning, Ga., where he commanded the 32nd Balloon Company from June 7th until the following November, when this Balloon Company was placed on inactive status. He was then transferred to Langley Field, Va., where he commanded the Airship School Detachment and was a student at the Airship School until the completion of his airship training in June, 1922. He was rated as "Airship Pilot" on June 22nd.

Transferred to Aberdeen Proving Ground, Md., Colonel Kepner commanded the 18th Airship Company until March, 1923, and performed the additional duty as Commanding Officer of Air Corps troops at that station to November 15, 1922. During the night of July 27-28, 1922, he made a cross country flight to New York City and return in the Airship C-2.

On March 5, 1923, Colonel Kepner reported at the Naval Airship Station at Lakehurst, N.J., for duty as student to pursue the rigid airship course. During the course of this training he participated in flights aboard the airships SHENANDOAH and LOS ANGELES. In addition, he pursued the regular navigation course, and he served as assistant navigator on the airship LOS ANGELES on two flights to the Island of Bermuda. In all, he completed 340 hours of flying on rigid sirships.

In August, 1925, upon the completion of his ground, flying and navigation instruction at the Lakehurst Naval Air Station, Colonel Kepner was transferred to Brooks Field, Texas, He was stationed at that Field until March 31, 1926, and was then transferred to Scott Field, Belleville, Ill., where he was Post Exchange Officer to August 4, 1926; Commanding Officer of the 9th Airship Company, in addition to various other duties, to July 18, 1927;

and thereafter, until November 1, 1928, Assistant Commandant of the Balloon and Airship School and Executive Officer of Scott Field. During the maneuvers in Texas in 1927, he was a member of two airship crews, and during the summers of 1927 and 1928 he was test pilot and commander of the Air Corps semi-rigid airship RS-1.

In the National Elimination Balloon Race in 1927, which started from Akron, Ohio, Colonel Kepner, with Lieut. Wm. O. Eareckson as his aide, finished in third place among a field of 15 contestants and traveling a distance given officially as 595 miles, landing at Biddeford, Maine. Entitled to represent the United States in the Gordon-Bennett International Balloon Race, held September 10, 1927, at Detroit, Mich., the Army team of Kepner and Eareckson finished tenth in a field of 15 contestants. Better times, however, were ahead of these two aeronauts in the following year, for in the National Elimination Balloon Race, which started from Pittsburgh, Pa., on May 30th, Army Entry No.1, which they piloted, finished in first place, which again entitled them to represent the United States in the Gordon-Bennett International Balloon Race, held at Detroit, Mich., on June 30th. In competition with eleven other entrants, they finished in first place, covering a distance of 460.9 miles and landing near Kenbridge, Va.

Starting on November 3, 1928, Colonel Kepner pursued the special course in Airplane Observation at the Advance Flying School at Kelly Field, Texas, and graduated on February 28, 1929. He was then assigned to duty at the Materiel Division, Wright Field, Dayton, Ohio, as Chief of the Lighter-than-Air Branch of the Experimental Engineering Section.

Colonel Kepner, for the third consecutive year, was a contestant in the International Balloon Race, which started from St. Louis, Mo., September 28, 1929. With Captain James F. Powell as his aide, he missed being a winner for the second time by a matter of three miles and finished in second place.

Relieved from duty at Wright Field on May 19, 1930, Colonel Kepner was on detached service at Lakehurst, N.J., and at Langley Field, Va., with the 19th Airship Company until August 21, 1930, and was then assigned to station at March Field, Riverside, Calif., where he was a student at the Primary Flying School and commanded the 9th Bombardment Squadron. Upon the completion of his primary flying training, October 20, 1931, he was transferred to Kelly Field, Texas, for advanced training, which he completed on February 26, 1932, on which date he was rated as "Airplane Pilot." He then was again assigned to Wright Field, Ohio, this time for duty in the Procurement Section of the Materiel Division. In June, 1932, he was appointed Chief of the Purchase Branch of the Materiel Division, and he occupied this position until August, 1935.

In the Gordon-Bennett International Balloon Race, which was held at Chicago in September, 1933, Colonel Kepner served as Chief of Operations on the Contest Committee.

For a period of two months during the summer of 1934, he was on detached service at Rapid City, S.D., in connection with the National Geographic Society-Army Air Corps Stratosphere Flight. On July 28th of that year, accompanied by Captains Albert W. Stevens and Orvil A. Anderson, he reached an altitude of 60,613 feet in the stratosphere balloon, when a tear in the balloon fabric necessitated a descent. After the balloon virtually parachuted down to an altitude somewhat below 4,000 feet, it was considered that the rate of descent was too rapid for the personal safety of the aeronauts, and they jumped from the gondola with their parachutes. This daring venture into the regions of the upper air was considered such an extraordinary achievement that all three of these Air Corps officers were awarded the Distinguished Flying Cross.

From August, 1935, to June, 1936, Colonel Kepner was a student at the Air Corps Tactical School at Maxwell Field, Ala., and, following his graduation, he was a student for another year at the Command and General Staff School at Fort Leavenworth, Kansas, from which he graduated in June, 1937. He is now under orders for duty with the GHQ Air Force at Langley Field, Va.

From June 3 to 7, 1936, Colonel Kepner participated in a novel flight across the American continent from Mitchel Field N.Y., to Los Angeles, Calif. Piloting a P-12 Pursuit plane, he escorted Major Ira C. Eaker, Air Corps, who also piloted a P-12 but who, on the trip of 2600 miles of airway, relied solely on the instruments in the plane, without any outside vision, to guide him to his destination. By easy stages, owing to the limited gasoline supply of the small Pursuit planes, the two officers completed the long trip without incident, Major Eaker seated in the hooded cockpit of his plane and Colonel Kepner serving as a convoy to avert any mishaps. There were several times when the escort plane was forced to stay behind the "blind" ship, because of poor visibility, thus placing reliance on the "blind" ship to lead the way.

Colonel Kepner received his promotion to Captain on July 1, 1920; to Major, October 1, 1930, and to Lieut. Colonel (temp.) on June 16, 1936.

LIEUT. COLONEL WILLIAM C. OCKER

Lieut. Colonel William C. Ocker, one of the oldest pilots in point of service in the Army Air Corps, and who was considered one of its most expert fliers, was born in Philadelphia, Pa., June 18, 1876, and was educated in the public schools of that city. Entering the military service, June 25, 1898, he served in the Spanish-American War and the Philippine Insurrection.

Up to January 31, 1899, he was with Battery G, 1st Artillery. Thereafter, and until September, 1912, he was a Cavalryman, serving an enlistment each with Troop L, 5th Cavalry; Troop C, 2nd Cavalry; Troop G, 13th Cavalry, and Troop M, 7th Cavalry.

When he reenlisted on September 24, 1912, he cast his lot with the Signal Corps, joined the Aviation Section of that branch of the service, and has been connected with Army aviation ever since. During his enlisted service with the Aviation Section, Signal Corps, he held successively the grades of Corporal, Sergeant, and Sergeant, 1st Class.

It was not long before he became an expert aviation mechanician as well as a proficient pilot of many different types of airplanes. He qualified for a pilot's license of the Aero Club of America in the year 1914, while holding the grade of Corporal, under circumstances which were quite interesting. During the time the Signal Corps Aviation School was in operation at North Island, San Diego, Calif., it occupied one end of the flying field thereat, while a flying school operated by the Curtiss Company was located at the other end. Colonel Ocker was such a devoted aviation enthusiast that, after he finished his day's work at the Signal Corps Aviation School, he was wont to repair to the other end of North Island to make himself as useful as possible at the Curtiss School in his capacity as aviation mechanic. So appreciative were the authorities of that School of the valuable assistance he rendered that one of their flying instructors, Mr. T.C. Macaulay, a pioneer aviator, who served as a Major in the Air Service during the World War, undertook to teach him to fly. Colonel Ocker proved to be an apt pupil, indeed, and showed exceptional flying skill when he took the test for his pilot's license. During his stay at the San Diego Aviation School, he acted as instructor in charge of training and himself supervised the training of officers from the time they started flying until they completed their tests for the rating of Junior Military Aviator.

In 1916, Colonel Ocker came to Washington with a Glenn L. Martin tractor plane for the purpose of demonstrating the Macy stabilizer. The late Brigadier General William Mitchell, then a Major in the Signal Corps, verbally instructed Colonel Ocker (then a Sergeant) to fly over the site of what is now the old Bolling Field to report his opinion on the suitability thereof as a flying field for the Nation's Capital. This flight was made on December 16th of that year.

Shortly thereafter, on January 11, 1917, Colonel Ocker accepted a commission in the Aviation Section, Signal Corps Reserve. He was the first to receive a Reserve commission in that branch of the service and the first reserve officer to be called to active duty.

Aside from his skill as an airplane pilot, Colonel Ocker excelled as a rifle and pistol shot, and he has in his possession two gold medals for victories achieved at the National Rifle and Pistol Matches.

Colonel Ocker was probably one of the first pilots to become interested in the Turn Indicator. It is believed that he tested the original Turn Indicator for Dr. Elmer Sperry, the inventor, and when the Bank and Turn instrument was brought out, he was very much enthused over it. The original intent of these instruments was to improve technical flying ability by showing pilots when smooth turns and banks were being made.

It was after Colonel Ocker realized the fallibility of the human senses as a true barometer of the actions of an airplane in flight, when the vision of the pilot was cut off by fog or other weather conditions, that he set out to convince pilots that their "feel of the ship" was largely a myth. He designed a small box with a bank and turn indicator and other instruments for use in connection with a revolving chair. This training device proved without doubt that man-made instruments are more reliable than the human mechanism in flight.

It was during the year 1926 that Col. Ocker and Major David A. Myers, Medical Corps, Flight Surgeon, conducted certain experiments and research work which led to the introduction of instrument flying instruction at the Air Corps Training Center. It had been firmly established that individuals who were blind-folded, placed in a revolving chair and rotated for a few turns, invariably replied after the chair was gently stopped that they had started to turn in the opposite direction of prior motion. The tendency of an individual's senses to play him false in a situation of this kind is the result of induced vertigo.

Major Myers gave this induced vertigo test to Colonel Ocker to ascertain what the mental reactions of an old-time pilot would be when he discovered he could not tell whether he was turning or sitting still. Following the test, he disappeared without comment of any kind, but soon returned with a view box which he carried in his hand. This was the box with the bank and turn indicator, previously mentioned. A very useful gadget in this view box was a flashlight bulb. The revolving chair test was repeated in all combinations of rotation, using the unlighted box to cut out the light and thus remove sight from the trinity of equilibrium senses.

There was the usual induced vertigo, with the usual inability to tell correctly which way his body was turning. The gyroscope was then started and the Bank and Turn Indicator put in action. The flashlight bulb was turned on and the tests repeated. This time every answer was correct as to direction of motion, stopping and starting. Even the confusion of reversals was absent. The sensations were felt the same as before, but by giving the answer shown by the pointer on the Bank and Turn Indicator instead of the answer prompted by his senses, it was found impossible to confuse him. This demonstration started the research into Blind Flying. It was immediately recognized that here was the answer to the inability of pilots to do blind flying without a visual reference to gravity.

By lighting the box, the equilibrium trinity of senses was restored to a coordinated action. Merely restoring sight to the equilibrium sense is not enough, however. There must be something within the pilot's range of vision that will act as a vertigo stopper and tell him what position his ship is in with relation to the earth; in other words, allow the pilot mentally to visualize "where is the ground." The hand on the Bank and Turn Indicator will accurately show motion in either direction, right or left, and will come to a dead center and remain there when there is no rotation.

Constant repetitions of demonstrations with the Ocker-Myers "Vertigo Stopper Box" finally convinced pilots that it was a real lie detector and that, on the ground at least, they could not tell which way they were turning if they could not see. Major Myers, with Colonel Ocker at the controls, spent some hours in the air as a "Blind Flying" observer, communicating by means of strings to indicate what Major Myers thought Colonel Ocker was doing from time to time.

Colonel Ocker also rigged up a covered cockpit ship, with one exposed control pilot seat, and spent many hours testing out the various reactions of himself and others. It was proven without a doubt that these reactions do take place in the air and in an intensified degree.

The value of the Ocker-Myers view box became generally recognized as the only means available of instructing pilots and prospective pilots while on the ground in the sensations they would experience and the reactions they would have if they attempted to do blind flying without an artificial horizon, which term means any instrument or combination of instruments that will quickly, easily and reliably give the pilot information that he may mentally visualize in terms of where is the ground.

Visualizing that it was imperative that every student at the Air Corps Training Center should have this instruction, Colonel Ocker originated the demonstration box and formulated a course of ground instruction in Blind Flying, which was adopted by the Air Corps as routine in May, 1934. In addition, a routine course in actual instrument flying follows the ground instruction.

In his various demonstrations and experiments in connection with "Blind" or instrument flying, Colonel Ocker had a most valuable ally in Lieut. Carl J. Crane, Air Corps, and they are the joint authors of the book published in 1932, under the title "Blind Flight in Theory and Practice."

For his invention of the blind flying training device and the assignment of his patent rights to the United States government, Colonel Ocker was awarded $1,000 by Congressional appropriation for the valuable service he rendered aviation in general and the Army Air Corps in particular.

Placed on active duty as a Captain in the Aviation Section, Signal Corps Reserve, on February 10, 1917, Colonel Ocker was assigned to station at Chandler Field, Essington, Pa., where he served as Commanding Officer from March 15th to April 13, 1917, and as Officer in Charge of flying instruction and the engineering division at that field until November 12, 1917. He was then transferred to Gerstner Field, Lake Charles, La., where he was in charge of flying instruction to May 4, 1918. From February 18, 1918, he was also in charge of the Pursuit School and the Gunnery School at Gerstner Field.

Transferred to Wilbur Wright Field, Ohio, he was on duty with the testing department of the technical section thereat until October 11, 1918. He was then assigned to the command of the 344th Handley-Page Service Squadron for overseas duty, but the Armistice was signed before his organization was finally prepared to sail.

Assigned to the Office of the Director of Air Service, Washington, D.C., Col. Ocker was on duty in the Training and Operations Group until March 11, 1920, when he was transferred to Langley Field, Va., where he served as Officer in Charge of Flying until the following September. At his next station, Bolling Field, D.C., he performed various duties and at different times was Commanding Officer of Headquarters Flight and Assistant Engineering Officer, Post En-

Engineering Officer, and Commanding Officer of the 56th Service Squadron until April 5, 1924.

Returning to the spot where for a number of years before the War he served as an enlisted man in the Aviation Section, Signal Corps - Rockwell Field, San Diego, Calif. - Colonel Ocker, in addition to performing various other duties, served as meteorological officer, signal officer, radio officer and information officer until January 2, 1926, when he was transferred to Crissy Field, Presidio of San Francisco, Calif. At this post, also, his duties were of a varied character, and at various times he commanded the post and the 91st Observation Squadron until July 16, 1929. He was then assigned to Brooks Field, Texas, where he commanded the 46th School Squadron until July, 1930.

Transferred to the Advanced Flying School, Kelly Field, Texas, Colonel Ocker served at various times as post inspector and post transportation officer, in addition to other duties, and at different times was in temporary command of the Advanced Flying School. He was transferred to Barksdale Field, La., on June 15, 1937.

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SOVIET FLYERS EXTEND THANKS TO AIR CORPS

The Soviet transpolar flyers, Colonel Gromov, Major Yumashev and Captain Danilin, who last month flew non-stop from Moscow, Russia, to San Jacinto, Calif., sent the following telegram to Major General Oscar Westover, Chief of the Air Corps, August 4, 1937, on the eve of their departure for their native land:

"On the day of our sailing home may we express to you General our sincere thanks to you and to the United States Army Air Corps for friendly and efficient assistance given us during and after our transpolar flight which greatly facilitated its success. We will be glad to reciprocate this friendliness to American fliers."

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NATIONAL GUARD SQUADRON CELEBRATES

The 115th Observation Squadron, California National Guard, celebrated its thirteenth birthday on July 11th with open house at the Griffith Park Airport, Los Angeles County. Interesting tactical flying demonstrations included dropping and picking up messages to and from the ground and formation flying. Flying, aerial photographic and communications equipment were open for public inspection.

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TEST FLIGHTS OF SUB-STRATOSPHERE PLANE

A recent announcement of Hon. Harry H. Woodring, Secretary of War, was to the effect that flight tests have begun at Wright Field, Dayton, Ohio, on the Army's new sub-stratosphere plane, the Lockheed XC-35. The plane, which successfully completed its transfer flight from Los Angeles, Calif., to Dayton, has passed its ground technical inspection and made its initial performance flights on August 5th.

Reports from Wright Field on the early flights indicate that the plane will be a satisfactory flying laboratory in which to accomplish the purpose of its purchase, namely, experiments on sealed, pressure cabins, high altitude apparatus, and air medical tests on human reactions in the sub-stratosphere.

The plane itself is not novel, save for its sealed, pressure cabin, supercharged engines and instruments. From an exterior view it is very similar to the Lockheed Electra now in use on several commercial airlines. Its principal experimental features are its cabin, which is designed and equipped to permit maintaining sea level pressures and oxygen content at high altitudes, and the many instruments it carries to facilitate physiological and psychological tests on personnel and technical tests of materiel in rarified atmospheres.

Aside from the military value expected from these tests, which are of prime importance now that planes are designed to fight at high altitudes, it is believed that the data procured should be of great importance to civil airlines, since the tests will go hand in hand with the experiments now being conducted commercially on "over-weather" flying.

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JAPANESE OFFICERS VISIT KELLY FIELD

Kelly Field received a visit recently from four Japanese Army officers and one civilian engineer who are now on a tour of flying fields in this country. The party, headed by Colonel J. Okada, included Major T. Kawashima, Major Tomojiro Honda, Captain K. Ikeda and Engineer W. Kuboyama.

The Japanese officers were particularly interested in American methods of periodic inspection of aircraft and engines. They also exhibited considerable interest in Kelly Field's new miniature range building, which had been completed a short time prior to their arrival. They were entertained during their 3-hour visit by Colonel E.A. Lohman, Assistant Commandant, and Major Isaiah Davies, Secretary of the Advanced Flying School, and were guests at luncheon at the Kelly Field Officers' Club.

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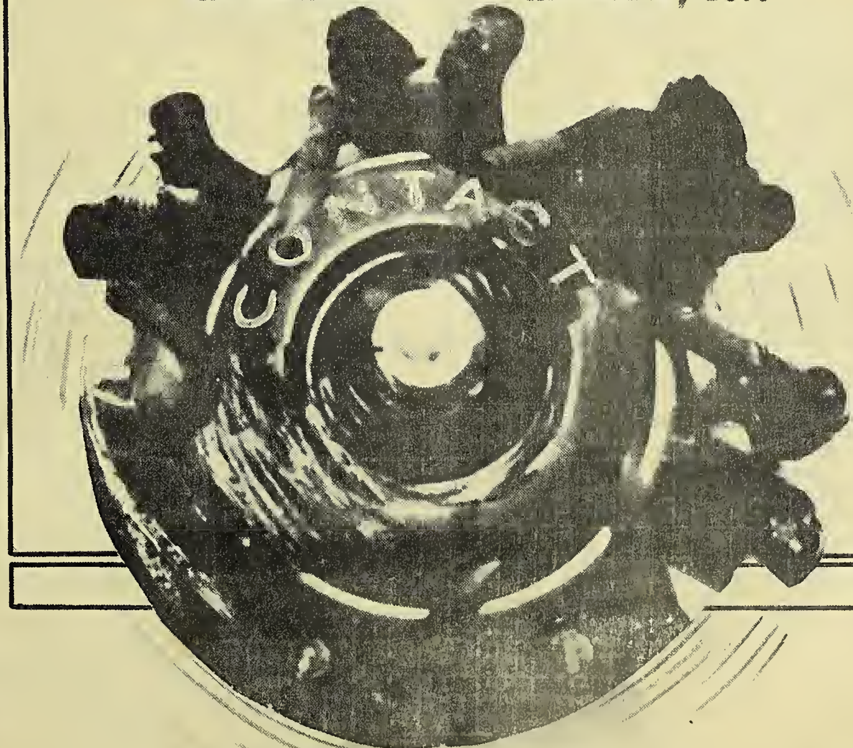
Air Corps News Letter

ISSUED BY THE OFFICE OF THE CHIEF OF THE AIR CORPS
WAR DEPARTMENT WASHINGTON, D.C.



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Information Division
Air Corps
September 1, 1937
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Washington, D.C.

The chief purpose of this publication is to distribute information on aeronautics to the flying personnel in the Regular Army, Reserve Corps, National Guard and others connected with aviation.

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THE EFFECT OF FLIGHT ON THE MIDDLE EAR

Notice to Flyers.- If you have reached the stage - like some of our old-timers - to whom the roar of a twin-row sounds like the gentle purr of a kitten, don't bother with this article now; you should have read it many years ago. On the other hand, if you are just beginning to have difficulty in hearing some compadre say: "It's quitting time," or "What will you have?", there may yet be time to save you if you read and profit by this article. It was submitted by Major Malcolm Grow, Chief Flight Surgeon, Office of the Chief of the Air Corps, in the belief that it would be of interest to Flight Surgeons and of benefit to pilots and passengers in the Air Corps - those who have the tenacity to read a technical paper. For those who cannot hurdle "trauma" or "Aero-otitis media," we suggest that you read the following chapters at least - "Symptoms" and "Treatment."

The Editor.

THE following excerpts are quoted from an article titled as above, published in the Journal of the American Medical Association by Captain Harry G. Armstrong, M.C., Flight Surgeon (Director of Physical Research Laboratory, Wright Field), and J.W. Heim, Ph.D., Assistant.

All Flight Surgeons have been requested to read and study the article, and this partial publication in the News Letter is deemed advisable in order that Air Corps personnel may have personal knowledge of the effects on their ears of altitude changes and what may be done to alleviate or avoid the same.

These excerpts have been compiled by the Medical Section, Office of the Chief of the Air Corps, in the hope that by bringing this matter to the attention of Air Corps personnel they will cooperate with the various medical officers and make a concerted effort to lessen the ever increasing number of cases of impaired hearing and other permanent effects primarily induced by the repeated trauma of altitude changes.

"Those familiar with aviation medicine are well aware that airplane pilots suffer more frequently from disturbance of the middle ear than from all other occupational diseases combined.

The phenomenal growth of commercial air transport, which carried approximately one million passengers in 1936, makes this problem of interest and importance to the general medical profession, for airplane passengers are exposed to the same influences as the pilots during flight, and in most instances are much more adversely affected.

DEFINITION

Aero-otitis media is an acute or chronic inflammation of the middle ear caused by a pressure difference between the air in the middle ear cavity and that of the surrounding atmosphere, commonly occurring during changes of altitude in airplane flights and characterized by inflammation, discomfort, pain, ringing in the ears and deafness.

CAUSE

Aero-otitis media is due to the lack of ventilation of the middle ear during changes of atmospheric pressure to the extent that the middle ear is injured due to: one, a failure to open the eustachian tube voluntarily when necessary, the other the inability to open it.

Failure to open the eustachian tubes, which lead from the middle ear to the throat, during changes in altitude in aircraft flights is most often due to ignorance of the necessity to do so, but may be due to carelessness or to being asleep or may arise from the influence of analgesics or anesthetics or from coma. The first two of these instances usually occur among inexperienced pilots and passengers, the third in sleeper airplanes, and the last group in ambulance planes.

Inability to ventilate the middle ear voluntarily is much more prevalent than is generally recognized. Some of the most frequent causes of blocking of the eustachian tubes are acute and chronic infections of the upper respiratory tract, nasal obstructions, sinusitis, tonsillitis, tumors and growths of the nose and nasopharynx, paralysis of the soft palate, enlargement of the tubal tonsil, inflammatory conditions of the eustachian tube or middle ear, scar tissue about inner end of the tube following adenectomy, and malposition of the jaws.

The effect of malposition of the lower jawbone in relation to blocking of the eustachian tube was first reported by Costen and later applied to aviation by Willhelmy. They showed that in individuals who had lost many teeth, wore ill fitting dental plates, had marked overbite, malocclusion, or worn molar teeth either unilateral or bilateral or with any other condition in which there was a shortening of the vertical position of the lower jaw, a compression blocking of the eustachian tube was likely to occur from a relaxation of the surrounding soft tissues.

SYMPTOMS

The symptoms of aero-otitis media depend on the duration, frequency and severity of the injury sustained.

Aero-otitis Media, Acute.-- Subjective Symptoms: Positive pressures in the middle ear are perceptible in consciousness to most individuals as a feeling of fulness in the middle ear. As the pressure increases the feeling of fulness is distinct and somewhat annoying and affects the hearing by imparting a distant sound and a lessened intensity. Very high pressures usually increase the discomfort and may be accompanied by ringing in the ears. The latter is of a steady hissing or roaring character or crackling and snapping. In some individuals there may be actual pain and vertigo of a mild nature. At extreme pressures in the middle ear there is increasing pain, ringing in the ears and vertigo, which finally becomes unbearable.

In normal cases about 15 mm. of pressure is sufficient to force air out through the eustachian tube, which relieves the pressure in the middle ear and consequently the accompanying symptoms. However, this relief is initiated by an annoying 'click,' which is both felt and heard as the drums snap back to normal position. In blocking of the tube the pressure required to force it open varies with the degree of stoppage. In these cases the pressure may be relieved gradually over a period of time instead of instantaneously, and a greater amount of pressure remains in the middle ear after the tube has again closed.

In descent, in which the atmospheric pressure is increasing and the pressure in the ear becomes negative, the symptoms are the same as already described, except that the pressure is never relieved through its own force acting on the eustachian tube because of the flapper-valve like action of the latter. For this reason the greatest difficulty usually occurs during descent in aircraft, and the highest pressure differentials have been seen and studied experimentally under this condition. In even medium negative pressure the pain in the ear is severe and resembles that of acute inflammation of the middle ear. The ringing in the ears is marked and there is usually vertigo or giddiness with beginning nausea. In well marked negative pressure the pain is very severe and radiates from the ear to the side of the head, the parotid gland and the cheek. Still lower pressures produce agonizing pain, which seems to localize not in the ear but deep in the substance of the parotid gland, which is located just in front of the ear.

Deafness is marked and vertigo and head noises usually increase, but the latter may disappear. At very great negative pressure the eardrum ruptures. This occurrence is a dramatic episode in which the patient feels 'as though hit along the side of the head with a plank,' a loud explosive report is felt and heard in the affected ear. There is a sharp piercing pain on the affected side, giddiness and nausea become marked and collapse or generalized shock follows. With rupture of the eardrum the acute pain quickly subsides, but a dull ache persists for from twelve to forty-eight hours. Hearing is distinctly diminished and vertigo and nausea may persist for from six to twenty-four hours.

With both positive and negative pressures, voluntarily opening the eustachian tube will immediately relieve all acute symptoms; but it is to be remembered that with extreme negative pressures it becomes impossible to overcome this by muscular action, and relief is obtained only by a return to a higher altitude. In cases in which the pressure has already produced injury, opening of the eustachian tube will not relieve the symptoms of pressure injury, and they persist until recovery has taken place. Pressures that may be only uncomfortable at first finally become painful. Moderate injury to the ear is followed by a sense of soreness in the ears and deafness lasting from one to twelve hours. Severe injury is followed by pain, deafress, vertigo and ringing in the ears for from four to forty-eight hours. The pain is similar to that of abscess of the middle ear, and the ringing in the ears is usually of a hissing or roaring character, the deafness of the conduction type and qualitative as well as quantitative.

Adero-Otitis Media, Chronic.-- Subjective Symptoms: In these cases there is a 'full and stuffy' feeling in the ears and difficulty in 'clearing' them. There is a partial loss of hearing, which is either unilateral or more pronounced on one side, and in some instances may vary from day to day. Head noises may be present, but rarely vertigo or pain. The condition is worse after flights, during acute infections of the upper respiratory tract, during changes of weather and during fatigue or debilitated states.

TREATMENT

Methods for Prevention.-- Those who take up aviation as a profession are and should continue to be carefully tested to determine if the eustachian tube is

(Continued on page 18).

RESERVE OFFICERS' CAMP AT SCHOEN FIELD

By Captain Fred W. Sommer, 309th Air Reserve Training Squadron

JULY 31, 1937, marked the closing of one of the most successful and instructive 14-day active duty camps for the Air Corps Reserve officers at Schoen Field, Fort Benjamin Harrison, Indiana.

Under the careful supervision and guidance of the Commanding Officer of Schoen Field, Captain Milton J. Smith, Air Corps, we were able to get our fill of flying for once and to leave with a feeling that we had a very instructive camp.

Captain C.F. Cornish, Air Reserve, the senior officer of the 309th Training Squadron, assumed command and appointed his staff, as follows:

Captains Fred W. Sommer, Operations Officer; Frank S. Estill, Engineering Officer; Charles E. Halstead, Supply Officer, and 2nd Lieut. Bernard M. Lloyd, Adjutant.

With a training itinerary published by Captain M.J. Smith, we planned our training so that we were able to obtain as much instructive flying and training as possible. With only three each PT-3A and BT-2B airplanes, of which only one from Schoen Field was fully equipped with instruments and radio, we decided to concentrate on instrument flying.

The mornings from 7:15 to 11:45 were devoted to flying, and the afternoons to class room work and lectures. We also used the week end for extended cross-country flying.

As all of the pilots had some previous instrument flying instruction, we endeavored to qualify as many for the Instrument Flying Test as possible. The average pilot time in instrument flying at this camp was 12 hours, 5 minutes. Two pilots passed the test.

The average pilot time in Air Navigation was 7 hours and 40 minutes; Formation Flying, 7 hours, 30 minutes; Night Air Navigation and other flying, 1 hour, 55 minutes. Average total pilot time, 33 hours and average total time in the air, which included pilot, safety pilot and observer time, was 50 hours and 37 minutes.

Great stress was placed on punctuality of take-off and landing, according to the time on the operations orders. In order to emphasize this point, we instigated a penalty system by which the pilot was fined ten cents for being late on take-off or landing, late to classes, leaving switches on, or not following operations orders. The money thus collected was used in furnishing a luncheon at the end of the camp for the enlisted men. It was not so much the fine that hurt the offender, but the kidding he received from his fellow officers. However, all the pilots entered into the spirit of the game and, as a result, there were very few victims near the end of the camp.

Two nights were devoted to night flying. All pilots soloed at night at the Indianapolis Municipal Airport, and each took a one-way night cross-country flight to Louisville, Ky.

There were no forced landings or accidents to airplanes or personnel; in fact, we did not even have a flat tire.

The enlisted men were efficient and hard working, and we always had all the airplanes on the line ready to take off at the prescribed time. All the enlisted men entered into the spirit of giving all the flying to the Reserve officers that was possible by keeping the airplanes in excellent condition.

All our instrument flying, extended air navigation and night flights were made with the three BT-2B airplanes.

Schoen Field has been greatly improved in the past two years with the help of a P.W.A. project and the supervision of Captain M.J. Smith. As a result, all types of Army and Navy airplanes are landing there. It is hoped that more of the Army pilots will include Schoen Field in their itinerary for their air navigation flights.

We can all truthfully say that during this camp we received all the flying and constructive military knowledge we could take - and then some - in the 14 days allotted for active duty training. At the close of camp we left for home and a good rest, hoping that we will have another camp next year as successful as the one just completed, but with more modern airplanes.

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37TH ATTACK SQUADRON LAYS SOME SMOKE

The 37th Attack Squadron, stationed at Langley Field, Va., worked a co-operative mission with the Chemical Warfare School at Edgewood Arsenal, Md., on August 2nd and 3rd. Two missions were flown, the first one consisting of a smoke screen laid around a boat with subsequent dye attacks made through the screen on the boat. The second mission was reminiscent of the recent West Coast Maneuvers. It was a 3:30 a.m. reveille with a 4:30 a.m. take-off. On this mission three ships laid a smoke screen to protect a landing party from a boat anchored in the bay. The other three ships attacked the landing party through the screen using dye.

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During July, the Engineering Department of the San Antonio Air Depot overhauled a total of 19 airplanes and 58 engines and repaired 45 airplanes and 22 engines.

ACTIVITIES AT MOFFETT FIELD, CALIF.

UNDER the recent shake-up of Observation units, Major Horace S. Kenyon, Jr., Air Corps, headed a group of seven officers transferred from Brooks Field, Texas, to Moffett Field, Calif., in June. Major Kenyon assumed command of Moffett Field, and Captain Courtland M. Brown took over the command of the Ninth Air Base Squadron. First Lieut. Lorry N. Tindal became Post Operations and Air Corps Supply Officer, and 1st Lieut. Robert Alan, Adjutant and Post Exchange Officer.

Second Lieuts. Herbert D. Schultz, Jr., John A. Pechuls and Russell L. Flolo, Air Reserve, were all assigned to the 82nd Observation Squadron, organized under Major Bushrod Hoppin, and composed largely of the personnel from Brooks Field.

The entire command now consists of the 82nd Observation Squadron, the 9th Air Base Squadron, and attached Medical and Quartermaster troops, totaling 305 enlisted men and 15 officers. The air strength of the field is made up of two O-43's, one O-31A, one BT-2 and one PT-3.

Tow target work with the surrounding Coast Artillery stations has formed the bulk of missions, all of which have been flown by Lieuts. Pechuls, Schultz and Flolo. With the recent arrival of 2nd Lieuts. Leonard Hudson, Jr. and Frederick L. Moore, Air Reserve, graduates of the Advanced Flying School, Kelly Field, last June, relief is in sight. Second Lieut. Willard R. Lazarus, Air Corps, the only Air Corps Reserve officer to receive a regular commission as a result of last spring's examinations, has also arrived, and he was welcomed as a relief to officers well loaded with assignments.

Major Joseph J. Canella, Infantry, took over the Quartermaster position upon the departure of Major Joe S. Underwood, Quartermaster Corps, for Panama.

July was spent in organizing, settling down and becoming acquainted. The nine sets of officers' quarters on the field are all occupied, which means that any additional married officers will live in one of the surrounding towns. The bachelors are well situated on the post in the bachelor officers' quarters, with rooms to spare. The town of Mountain View is one mile away; Palo Alto, 10 miles, San Jose, 15, and San Francisco, 36 miles. A four-lane highway passes the gate of Moffett Field, so that going to town is a simple matter.

Relations with the civilian population are cordial. On July 21st, the people of Mountain View and Los Altos entertained the officers and ladies of the field at a dinner dance at the Los Altos Country Club, at which time Major Kenyon expressed the appreciation of the field for the welcome accorded. Frequent attendance by officers at Rotary and Chamber of Commerce luncheons helps maintain the good feeling that now exists. Major Canella, the Post Quartermaster, is most adept at this type of maneuver.

From July 18th to 31st, the 316th Observation Squadron, commanded by Major Charles Harold Kruse, Air Reserve, was stationed at Moffett Field. The squadron brought its own ships - BT-9's and PT-3's, and flew from morning till night, conducting radio missions and gunnery on ground targets in the BT-9's.

From August 1st to 6th, the 367th Observation Squadron, under the command of Major John Clarence Gray, also flying their own ships, performed the same type of work. Both outfits received the highest commendation from the Post Operations Officer for their thorough training and excellent cooperation with the permanent installation.

On July 23rd, the 316th Observation Squadron entertained the officers and ladies of the post at a party, and on July 30th, the 316th Squadron joined the officers of the post in a party and dance.

The 367th Squadron was on the field for only five days before leaving to take part in the Fourth Army Maneuvers, and flew a very full schedule during that time. "Both Captain George E. Henry, Unit Instructor, and Majors Kruse and Gray are to be congratulated for the fine performance of the two squadrons," says the News Letter Correspondent.

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LIGHTER-THAN-AIR ACTIVITIES AT FT. LEWIS

July 20th marked the first flight in many years of a captive balloon at Fort Lewis, Washington. The operation was conducted by the newly constituted 3rd Balloon Squadron, which arrived June 19th at Fort Lewis from Moffett Field, Calif. This move terminated the activities of the 19th Airship Squadron, 55 men of which, together with four officers, constituted the nucleus from which the Third Balloon Squadron was organized. The remaining enlisted personnel was transferred to either the 82nd Observation Squadron or the 9th Air Base Squadron, both at Moffett Field, Calif. The TC-13 airship made its final flight from that station on June 2nd, and was at once deflated and placed in storage.

Pilots on duty with the 3rd Balloon Squadron, Fort Lewis, are Majors Clarence B. Lober, Michael E. McHugo, Elmer J. Bowling, Captain Haynie McCormick, Warrant Officer Robert E. Lassiter, Master Sergeants Ronald Short and Arvin Miller. Technical Sergeant Benjamin Cheska and Staff Sergeants Harth, Harper and Fosse

(Continued on Page 7).

"AND I LEARNED ABOUT FLYING FROM THAT."

Robert A. Winston, in the July 15th issue of THE SPORTSMAN PILOT and under the caption of "Night Formation," writes most interestingly regarding several illusions he experienced during the course of a night formation flight. In an editorial note prefacing the article, it is stated:

"Many pilots have had experiences similar to the one Mr. Winston reports, but he was the first to admit it. This aroused so much interest in the Navy that the Bureau of Aeronautics made an investigation of the phenomenon. In case you do any formation night flying just keep in mind what happened to the author."

Mr. Winston's article is reprinted in the News Letter through the courtesy of THE SPORTSMAN PILOT, and is as follows:

We took off from North Island at dusk. Beale, in Number Seven, was leading the section. Denvers was on the left in Number Eight and I was on the right in Number Nine. Banking sharply to the left to avoid the three-hundred-foot ridge along Point Loma, we circled the field for altitude, waiting for a nasal voice to come through in the routine radio test: "Fighting One Group from Lexington Base: test. Acknowledge." And one after another we answered: "Lexington Base from One Fox Seven, aye aye!" "Aye aye from One Fox Eight." "Nine, aye aye!"

This formality over, Beale led us down the Strand past Coronado to Border Field, practicing cross-overs from V to echelon, circling over San Ysidro for a few moments to look at the garish neon lights of Tijuana across the Border, then heading east to Otay Mesa. Here he turned the lead over to Denvers, who led the way around between San Diego and the mountains to Camp Kearney, where Denvers turned the lead over to me. Over Camp Kearney, I broke up the section for the usual period of practice landings, signaling for a rendezvous half an hour later and turning the lead back over to Beale, who headed for North Island.

The night was cool, but I had worn a heavy flying suit over my flight jacket and felt very comfortable. As we passed north of San Diego, I eased back a few yards to enjoy the brilliant pattern of the myriad of twinkling lights below.

This was the way night flying should be, I told myself. Single seaters were the only thing - nobody riding behind you to worry about in case of trouble - hop over the side if the engine quit, or even set 'em down on a strip of highway if the landing light wasn't on the blink. Flying these stubby fighters was a real treat after the sluggish observation ships we had trained in, and I had never felt more comfortable while flying at night than I did then. The ship responded to slightest touch of the controls or throttle, which helped ease the strain of the constant jockeying for position necessary in cruising along at a hundred knots only ten paces from the leader.

After we passed San Diego, Beale circled North Island and headed west. The air grew bumpy as we crossed over the Bay and I opened my interval a few yards, watching Beale's ship closely to avoid hitting it as he surged up and down in the rough. The outline of Beale's ship grew dimmer as I increased my distance and step-up, so I shifted my gaze from the ship itself to the bright white gleam of the turtle-back light on the top of the fuselage. Out of the corner of my eye I saw the lights of the city crawl slowly past below me and disappear astern. Ahead and to the right were the lights of La Jolla, jutting out into the dark expanse of the Pacific.

The Western sky had become overcast, merging with the sea to form a solid pall of inky blackness which obliterated all suggestion of a horizon. Against this formless background Beale's ship now seemed suspended in space. Every indication of motion was blotted out by the absence of anything above or below his ship which might indicate direction, speed or distance. Even the interval between my ship and Beale's seemed altered to some strange new dimension. When he decreased his speed with the throttle, the ship ahead did not seem *closer*, but merely larger, and when he increased his speed, instead of seeming *farther* from me, it only seemed *smaller*. It was like the optical illusion of looking at one of those trick drawings which reverses itself after you stare at it for a few seconds.

I blinked my eyes, and the illusion disappeared, but in a few moments it returned. I blinked again, but it remained. I shook my head, and again things were normal; distance was no longer size, but distance, as it should be.

Staring intently at the white light ahead of me, I concentrated on the task of keeping the interval between the two ships from changing. This time I felt it with a distinct snap as the dimensions reversed themselves. Irritated, I jerked my head around and looked back over my right shoulder at the lights of the city behind me. Instantly my sense of orientation returned; my plane was no longer suspended in space, but moving forward.

Although my backward glance had been brief, I looked ahead again just in time to avoid hitting Beale's ship, which had been thrown up in front of me by a violent updraft. This would never do, I realized. Background or no background, I must keep my eyes where they belonged or I would be in real trouble.

A quick glance over at Denvers' ship showed me that my own interval was too close, making an uneven formation. The second plane in the section always set the interval, so I obediently eased my throttle and dropped back a few yards until I was even with Denvers.

A few seconds later the other two ships banked up in a right turn. I started to follow, but the controls felt queer. Glancing at the turn-and-bank indicator, I saw that the pointer indicated a left turn, while the ball showed a right bank. No help there, I thought; Beale must be skidding his turn. Soon it became apparent that I was falling behind the others, who were above and ahead of me. I advanced my throttle, but the distance increased. Soon I was in a vertical bank, but still they were pulling away from me.

Desperately I jammed on full gun, past the throttle-stop, in an effort to catch up. But still they pulled ahead of me. A glance at my airspeed indicator showed 130 knots, with the speed increasing. Still the inky blackness gave me no hint of my direction. The other two ships were now banked up vertically above me. My feeling of helplessness changed to resentment. What was that damned fool Beale trying to do! A wing-over? Of all the crazy things to do at night! I reached for my microphone to protest.

Swiftly the other two ships drifted away and disappeared above me. A lone star appeared dead ahead over my engine cowling. Suddenly I felt the sickening, lost, suspended-in-space sensation which precedes a whip-stall. My mind flashed ahead to the consequences: a vertical climb . . . the sudden loss of flying speed which would follow . . . the violent forward lurch of the plane from the weight of the heavy engine in its nose... the rending crunch as the engine would be snapped off its mountings. . .

Frantically I shoved the stick all the way forward in an attempt to recover from the stall, but instead of levelling off into normal flight, the ship behaved as if possessed; the controls stiffened, the wires screamed and the engine howled like a thousand devils. My goggles were snatched from my head as if by an unseen hand and the wind tore at my eyes. I felt the safety belt dig into my thighs and the blood bulging the veins of my head, and knew that I had gone over on my back and that the ship was in inverted flight.

This was the first indication of my true predicament that I had had for several seconds. Fortunately the safety belt was fairly tight, and I could still reach the rudder pedals with my toes. Blinded by the terrific gale that beat into my eyes, I instinctively went through the motions of a half-roll, easing the throttle at the same time. The high-pitched scream of the wires gradually descended the scale, the gale died down and my sight returned enough for me to see a glow which marked an unnaturally high horizon.

Steading down on this, I glanced at my instruments: air-speed 170 knots, altitude 200 feet. Quickly I jerked the stick back and the black horizon dropped abruptly beneath me to reveal the lights of San Diego dead ahead. I had almost plowed straight into the ridge of Point Loma.

Only then, with the realization of the fate I had so narrowly escaped, did fear set in. I felt suddenly cold and weak. The thought of what had almost happened was repugnant, and in a few seconds it grew like an enormous, intangible thing of appalling proportions, as my mind tried to disbelieve it. My knees were shaking so hard that I could hardly keep my feet on the controls.

An insistent voice in my ear-phones recalled me: "One Fox Nine! One Fox Nine from One Fox Seven! Acknowledge!"

Mechanically I lifted the dangling microphone and forced myself to speak: "One Fox Seven from One Fox Nine: my goggles blew off. Am returning to base. Acknowledge."

"One Fox Seven, aye, aye."

My mind leaped to the new task. The lights of North Island were beneath me and my engine was purring along as smoothly as if nothing had ever happened. The whole incident seemed far away, impossible. I felt warm again, and my knees stopped shaking. Wiping my eyes with the back of my glove, I hunched forward to take advantage of the scanty protection offered by the windshield and scanned the horizon.

Far above me, the other two planes were circling the field together. Off to my right and below me, a division of Scouting Four was breaking up down over the Strand. Violating all course rules, I cut in ahead of them and nosed down towards the flood light at the end of the landing mat. I nursed the ship along in a power glide, eased it down until the wheels touched, chopped the throttle back, and rolled to an easy stop. Then, after I was safely down, my knees began to shake again so violently that I could hardly taxi back to the hangar.

My mechanic stared at me curiously as I dragged myself out of the narrow cockpit. "Everything all right, sir?" he asked as he extended the inspection sheet for me to sign.

"Yes", I answered slowly, "everything's all right. But you very nearly lost your airplane tonight."

"How was that, sir?"

For a long moment I looked back over my shoulder at the black pall over Point Loma. "I don't know," I replied vaguely. "My goggles blew off." Absently I signed the inspection sheet and walked slowly away towards the squadron office. The ground felt strangely warm and comforting under my feet and the lights seemed unusually bright and pleasant.

A few minutes later the others hurried up. "What the devil happened to you?" demanded Beale. "Why did you run away from us?"

"Run away from you?" I cried angrily. "It's the other way around! Why did you go into that wing-over? You nearly spun me in!"

"What wing-over? What are you talking about?"

"Don't try to give me that stuff! You know well enough. When we were headed west over Mission Beach. You went into a right wing-over, and I nearly did a whip-stall trying to keep up with you. I damned near went in before I got straightened out."

"But we didn't turn right!" protested Beale. "We turned left!"

"Yeah," said Denvers, "and I looked out and saw you banked up on your side. You hung there a minute, then dived out under us like a flash. That was the last we saw of you until we heard you over the radio and saw you coming in to land."

I must have paled visibly. "Then you never turned to the right?"

"Of course not," said Beale. "I was about to bring us home, before you busted up the formation. We didn't know where the devil you had gone, till you finally answered after I had called you about five times."

"Then I was headed straight down, instead of up", I said, shuddering.

"What do you mean?",asked Denvers.

"I felt like I was about to do a whip-stall," I said, "so I pushed over, but instead of heading straight up, I must have headed straight down. I thought I saw a star dead ahead, but it must have been a light on the beach."

"You mean you pushed over on your back from three thousand feet?" asked Beake incredulously.

"Yes," I answered faintly, "and with full gun."

"Great Fish!" said Denvers. "Then you did an outside loop!"

"Just half of one; I managed to roll out of it at the bottom."

"Well, if that's the case,"drawled Beale, "from now on you're just living on borrowed time!"

"Fine damn thing!" said Denvers facetiously. "We'd never have found you. We'd have been out there all night dropping flares on the water."

"I guess you would. I must have had close to three hundred knots on the way down."

"How on earth did you ever get mixed up like that?", asked Beale.

"I don't know. I could have sworn you were turning the other way."

"It's easy to get confused on a dark night," said Denvers. "One night down at Pensacola we were flying cross-country formation to Mobile, and I got balled up as we crossed the bay. When we got there, I looked out and there was Mobile cocked up at a forty-five degree angle. 'Great Guns!' says I, 'is Mobile built on the side of a hill?' But it was me who was banked up on my side, as I found when I spun out of the formation."

"Yes, that's it; that's exactly what happened to me."

We hung up our flight gear and started out into the night, walking along silently for a few moments. Suddenly I realized for the first time how close I had come to having my life snuffed out like a dropped candle. I could almost see the others sorting out my jumbled personal effects to ship home. "By the way," I said absently, "the keys to my trunk are in the top drawer of my dresser. Don't go busting it open."

"Say, what are you mumbling about?" asked Beale.

"Nothing," I said, snapping back with a start. "Come on; let's eat."

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Lighter than Air Activities at Ft. Lewis

(Continued from Page 4).

also accompanied the balloon squadron in the move to its new station.

All those interested in lighter-than-air activities regret the passing of the airship and its useful activities in the Air Corps picture. In final tribute to the TC-13, a brief summary of its achievements is perhaps in order.

This airship was in commission just over four years, during which time it flew 3819 hours. The longest distance covered was 1854 miles, which was flown at 65 miles per hour air speed and adverse wind over much of the journey. At 40 m.p.h. it had a computed still air range of 3,500 miles. The longest flight in point of time was slightly over 76 hours. This flight was terminated on account of weather, and at that time over 500 gallons of fuel remained. This was probably the first airship constructed in which actual performance exceeded that laid down in specifications.

It is interesting to note that the overall design safety factor was four times that of many large rigid airships, which proved its value when the TC-13 outrode a storm, during which wind velocities exceeded 65 miles per hour and great turbulence existed.

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ATTENTION: As previously stated, the News Letter most cordially welcomes stories from pilots under the heading: "And I Learned About Flying From That."

AIRPLANES DO CRASH

By Captain Herbert B. Wright, Flight Surgeon
37th Division Aviation, Ohio National Guard

Is there anything that *you* can do about that? Indeed there is, if you are anywhere near the scene of the accident. During active service, on maneuvers, or during training periods, you may very well see an airplane crack-up and be near enough to render assistance. It seems worth while to inform the troops throughout the State in regard to some of the peculiar problems which may arise at the scene of an accident. The men of our own squadron are familiar with the best methods of rendering aid but chances are good that if an accident occurs it will be in territory remote from the landing field. Other troops will be the first on the spot and should be familiar with the best methods of supplying intelligent aid.

The first thing to do is to get the pilot and passengers out of the airplane for most frequently if the crash has been a severe one, the people involved have been pinned in the wreckage. A cool collected person will have one thought uppermost in his mind upon approaching the wreck, that is, *the danger of fire*. Gasoline from broken tanks is usually sprayed over the airplane and surrounding ground. Inflammable fabric, clothing,and nearby objects, become soaked with it and the slightest spark may create a tragic flaming pyre. The first important thing one can do is to organize the crowd about the wreck so as to prevent fire. There always is a crowd, you know, they seem to spring up from nowhere. Definite guards should be posted to keep the spectators back and see that no one in the crowd is smoking. Your efforts may then safely be concentrated upon removing the injured from the wrecked airplane. In doing this it may be necessary to saw through certain members of the structure. In this case, don't forget that *danger of fire* is still present and unless your hack saw is kept well oiled, it may create a spark which will touch off that lurking demon. Static sparks may also occur and should be guarded against as well as possible. Interfering with the battery or battery cables is a dangerous operation and should be left until the occupants have been safely removed.

When the pilot and passengers have been removed they should be carried a safe distance from the scene of the wreck and laid upon a blanket, coat, or whatever material is available. The cardinal rules in the treatment of shock then comes into force and must be followed implicitly. They include:

1. Keep the patient *quiet*.
2. Keep the patient *warm*.
3. Relieve the patient's *pain*
4. Stop the *bleeding*.

"Quiet" means *motionless* and in *repose*. It has often been said that as many airplane pilots have been killed by their being rushed from the scene of an accident in an unsuitable conveyance as have been killed by airplane crashes themselves. To deposit a seriously injured person in a passenger automobile and drive him at sixty miles an hour over rough roads to the nearest hospital is the worst possible thing that can be done. The further shock of rough handling, movement of fractured bones, increase in bleeding and uncomfortable positions is often just enough to cause fatality, whereas if the case had been handled properly he might have had a chance to survive. Just because a man's life is at stake don't think that action for action's sake is necessary. More help to the injured is given by considered and intelligent delay than can possibly come from hurried unconsidered "doing something about it". So lay the patient on the ground and keep him there until a suitable litter can be devised and an ambulance obtained, *then*, don't turn on the siren and try to imitate Barney Oldfield on the way to the hospital. The speed of the ambulance on any but the smoothest, straightest, roads should not exceed twenty miles an hour and ten miles an hour is often much better.

Warmth is of extreme importance to anyone seriously injured. The word "shock" means that the circulatory apparatus has been confused and become inadequate. The patient's extremities are cold; he is pale; and he is probably unconscious. Everything possible should be done to raise his temperature to normal. Even on hot days he should be covered and on the colder days he should have blankets and clothing piled on in profusion. If hot water bottles are available put them at each foot, at the sides of the body, and along the arms and legs. Be careful about burning an unconscious person with hot water bottles. It is easily done and just as easily avoided by placing a piece of thin clothing between the hot water bottle and the skin.

Relief of pain without the use of hypnotics can be accomplished in the field by *immobilizing any fractured bones*. Pain occurs when the broken ends of bones rub on each other. Shock is increased each time pain occurs. It becomes highly important, therefore, to splint the fractures immediately. Methods of splinting are well described in TR 112-5 and should be familiar to all. If a Thomas splint is available it should be applied immediately. The traction on the limb is important because when a bone is broken the muscular action tends to pull the fragments past each other. If this muscular action is counteracted the job of properly setting the fractures later will be much simpler. If formal apparatus of this sort is not available, a fractured limb may be placed in a pillow, folded blanket or coat; a stick of wood or a piece of board which is placed on each side of the limb and extends throughout its entire length can then be held in place by an encircling piece of bandage or rope. This not only relieves most of the pain but allows the patient to be moved when the proper time comes.

Control of bleeding is of equal importance in combating shock. Most bleeding can be controlled by compression. Applying the first aid bandages (from the packet in the airplane or your own supply) directly over the wound tightly enough to furnish compression will stop all ordinary bleeding. This is the first method to be tried and the use of tourniquets should be reserved for bleeding that is not controlled by compression. A peculiar result in giving soldiers and others superficial education in first aid measures is the great desire it seems to create to use a tourniquet on every occasion. Don't show off your meager knowledge by applying a tourniquet to a finger superficially cut when a little pressure will do the work as well. Use pressure first and a tourniquet if that hasn't worked. Tourniquets should be applied around the upper thigh near the hip and around the upper arm near the shoulder. They are useless near the knee, anywhere on the lower leg or on the forearm.

If the patient is now lying down, is warm, his fractures splinted, and his bleeding stopped, you have done everything a doctor might have done except give him morphine. It is hoped that by the time all these maneuvers have been accomplished, the services of a medical officer will have been obtained. If the officer has arrived he will take charge and your responsibilities are ended as far as the patient goes. You should make sure, however, that the airplane is well guarded to prevent theft of instruments and other valuable Government property.

If the medical officer has not arrived your next move is to wait. What do you wait for? - For two things: First, and the most important, the partial recovery of your patient. You hope that his pulse will become slower and easier to feel, and you hope that his color returns, and that he regains consciousness. You should be willing to wait an hour for some of these things to happen before you consider moving him. The second thing you wait for is a proper litter and a proper conveyance in which to transport the patient to the nearest medical aid. Your patient must be transported slowly in a comfortable position without any more movement on his part than can be helped. If he has to be carried to a suitable road, that is much better than getting the ambulance bogged down in the same field in which the airplane crashed. In transporting the patient by litter, do it slowly and avoid jostling him about.

The above suggestions apply to automobile and similar accidents as well as to those concerning airplanes. It is hoped that should the occasion arise, they will be a factor in prompt and efficient first aid.-From Ohio Guardsman.

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2ND BOMBARDMENT GROUP PARTICIPATES IN JOINT ARMY-NAVY EXERCISE

Hq. and Hqrs. Sqdn., 2nd Bomb. Group:

The following officers and enlisted men of this organization departed from Langley Field, Va., for March Field, Calif., to participate in the West Coast maneuvers: Lieut. Colonel Olds, Captains McCormick, Williams, Caldwell, 1st Lieuts. Freeman, Mills, Tucker, Master Sergeant Davis, Tech. Sergeants Cobb, Moselander, Staff Sergeants Boutty, Boyles, Jolly, McDonald, Van Sweringen, Sergeants Dodson, Holmes, Ludwig, Corporals Smith, Vick, Wilson, Privates 1st Class Jester, Olive, Zaun, Privates Harbaugh, Hucik, Johnson and Trout.

20th Bombardment Squadron:

Two B-17's from this organization, with assigned combat crews, departed for March Field on August 1st to participate in the Joint Army-Navy Exercise No. 4.

49th Bombardment Squadron:

On August 1st, three B-17 Bombers of this organization, carrying 27 men, departed for the West Coast for participation in the Joint Army-Navy Exercise. Thirteen of the 27 men were officers. Eighteen other enlisted men were ferried to the West Coast by Transport planes and B-10B's.

21st Reconnaissance Squadron:

This Squadron has one plane participating in maneuvers being held on the West Coast, that plane being the YOA-5 Amphibian, better known as the "Big Duck." The crew members from this Squadron are Major Downey, Captain Fitzmaurice, Staff Sgt. John E. Morris, Corporals Paul Hamerla and George A. Kingston. In addition to the above, we also have 1st Lieut. John W. Egan, Privates 1st Class William A. Lentz and Kenneth G. Wickman, who are participating in the maneuvers with other squadrons.

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GUNNERY PRACTICE BY LANGLEY PURSUITERS AT VIRGINIA BEACH

By the News Letter Correspondent

The Eighth Pursuit Group returned to their home base, Langley Field, Va., on August 5th, after ten days of ground and aerial gunnery at Virginia Beach, Va.

This completed the third such encampment of the Group this year at the Virginia National Guard Airport, located on the State Rifle Range, and it was considerably simplified by being held between periods of encampments of Virginia National Guard units, thus utilizing their camp, tentage, et al, saving transportation and time in establishing camp, to say nothing of a lot of hard work.

To the members of the 8th Pursuit Group, Virginia Beach has become a second home address and to many the favorite. Rumor No. 01-76-7Z even has it that the barracks will be moved to Virginia Beach and the tents will be pitched at Langley. Virginia Beach offers one of the best beach resorts on the Atlantic Coast, and for those who aren't interested in the fine surf ... well, there's still the beach (and believe it or not, the ratio is at least two to one!!!)

Aside from the recreational facilities, working conditions are ideal at the National Guard Airport. The field, although somewhat small, has proven, with the help of a few axes and shovels and the necessary man power, adequate for our PB-2A airplanes.

The beach and sand dunes to the south of the rifle range, and only a few minutes by truck from camp, make an excellent ground range. The coast along this area is clear of small boats, making the area between Coast Guard stations excellent for aerial gunnery. This is quite a contrast with operations at home, where our ground range is on Plum Tree Island, and requires boat trips and a lot of 4:00 a.m. risings for the range detail, to say nothing of bologna and cold ham lunches, and an aerial range twenty minutes away by air.

As in the past, this encampment was utilized for long range altitude and mass firing on both aerial and ground targets. During our exercise in June-July, all combat crews were qualified, so we were able to concentrate on formation and long range firing. Several still-water inlets south of the airdrome offer excellent targets for mass firing. The advantage of preliminary mass firing on a water target is easily seen as the pattern of shots, center of impact, etc., can be readily seen by the pilots or by a single ship acting as observer.

As in previous instances, firing culminated in eighteen ships firing simultaneously on one 60' x 6' target, and flights of six ships firing on a 6' x 30' target. Our record of burning down such targets with tracer ammunition is still 100%. For the larger target, the Squadron of eighteen ships approached in three six-ship flights "strings" abreast, on the same level and about 150 feet apart. From this formation all ships could turn simultaneously to the right or left as the case may be, then dive simultaneously straight forward at the target. In either case the field of fire forward is clear of other ships in the formation, the only prerequisite being that all ships dive together and have plenty of ammunition with the empty case chutes stopped up to prevent ships to the rear from picking up empty cases.

This formation may be used on any size target, ground or aerial, the volume and concentration of fire being tantamount to complete destruction of the target. However, for a small ground target or small formation, simulated by a single towed target, better accuracy of fire may be obtained by having a larger interval between flights, the flights approaching in "waves" and beginning firing as the preceding flight ceases and starts pulling away. It must be borne in mind, however, that this firing is at fairly long range. All airplanes cease firing and pull out away from the echelon before passing the target.

At the present time we are on the alert, constantly scanning the silver screen for more concrete evidence of our firing accomplishments as recorded by Pathe News, our guests at the last encampment.

Daily missions of mass firing, aerial gunnery and interception problems continue at Langley Field, but, Oh!.... for a cool swim and a good sun bath or just a walk along the boardwalk.

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SHOULDER SLEEVE INSIGNIA FOR GHQ A.F.

The War Department recently approved the following shoulder sleeve insignia for the General Headquarters Air Force:

On a golden orange disk $2\frac{3}{4}$ inch in diameter, an ultramarine blue, three-bladed impeller, the surved surfaces emanating from the points of an imaginary $\frac{3}{4}$" equilateral triangle.

DESCRIPTION:

The design represents the GHQ Air Force:- the striking combat element of the Air Corps as originally organized into three wings. The action expressed by the three-bladed impeller is symbolic of speed, mobility, flight through space, and destructive power exemplifiied by the GHQ Air Force.

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NOTICE TO PILOTS:

Are you writing your story "And I Learned About Flying From That" for the News Letter? Your experience may help others - perhaps more than you think.

AUTOMATIC LANDING OF BIG ARMY PLANE ACCOMPLISHED

The Army Air Corps has just completed a series of history making experimental flights at Wright Field, Dayton, Ohio, in which a large Army cargo plane was landed several times under full automatic control. Utilizing a new device, perfected after two years of intensive research by Air Corps engineers, the plane was repeatedly landed under adverse wind conditions without any human assistance of any kind. The perfection of this device makes it possible to land a plane in a dense fog, in absolute darkness or under other adverse conditions. This development opens up a wide field of speculation as to the future of military and commercial planes guided and controlled by automatic devices.

The results of the Wright Field experiments are certain to attract wide attention from all persons interested in the safe navigation of the air and mark a notable extension of the field of automatic control of airplanes.

The automatic landings of the big cargo airplane were made with amazing accuracy.

Unlike other so-called automatic landing systems in which the pilot of the airplane or ground personnel actually through remote control directs the landing of the airplane, the Air Corps craft is landed without assistance from the human pilot of the airplane and also without remote control from the ground.

Air Corps officials stated that the closest other approach to fully automatic landing of which they have knowledge is a system being used experimentally by a civil agency on the West Coast, in which the pilot must constantly make adjustments during the landing procedure. Another method is that used in the British "Queen Bee" experiments in which the airplane is remotely controlled in flight and landed by an observer either on the ground or in an accompanying airplane, who must be able to see the airplane which is under radio control.

Air Corps officials said that their experiments and research have been conducted in order to arrive at fully automatic landing that removes the human element from the procedure of landing through fog and other adverse weather conditions which prevent visual contact from the airplane to the ground or from the ground to the airplane.

Aboard the big cargo airplane during the successful automatic landing tests were Captains Carl J. Crane, George V. Holloman and Mr. Raymond Stout, all of whom were, during the automatic flights and landings, nothing more than interested passengers, since no human hand touched a control once the automatic features were placed into operation.

With the Sperry gyro pilot flying the airplane headed in a southerly direction, the master automatic landing switch was closed over Dayton and from that instant until the final roll of the airplane headed borth on the runway at Patterson Field not one control was touched by the airmen aboard the airplane. With the exception of the Sperry gyro pilot, all of the electro-mechanic elements of the automatic landing system were designed by personnel of the Air Corps Materiel Division at Wright Field.

The automatic landing system as used in the recent tests at Wright Field shows promise of eliminating the possibility of human error in aircraft landings under conditions of poor weather. The Air Corps expects to conduct further experiments with the automatic system of landing to the end that additional refinements will make automatic landing an everyday occurrence in good weather as well as in bad.

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RESERVE OFFICERS TRAIN AT LANGLEY FIELD

The 96th Bombardment Squadron at Langley Field, Va., changed the nature of its activities with the start of the month of August. When the Y1B-17's departed for the West Coast Army-Navy Maneuvers, August 1st, the activities of this squadron were turned toward the training of the following-named Air Reserve officers who had reported several days previously for 14 days' active duty viz: Major Ivor Massey, Captains William H. McAvoy, Eric Knue Shilling, 1st Lieuts. Winthrop H. Towner, Norman Lee Barr, Marvin C. Demler, Wilbur O. Riley and Lawrence S. Semans.

The training consisted of familiarization, navigation and bombing missions in PT-3A, BT-9A, B-10B and OA-4A airplanes. In addition, daily lectures on tactical subjects were given.

Considering the fact that the entire 2nd Bombardment Group was on maneuvers and the camp was very short of equipment and personnel, everything went satisfactorily until August 5th, when the only B-10B left in the Squadron ran into difficulties. The pilot ground-looped when landing from a bombing mission. There was no injury to personnel.

This sorry ending to an otherwise successful training period left no one so sad as the officers just reporting to the Second Bombardment Group for duty. They were hoping to get in a great deal of flying time in that plane before the Group returned from the West Coast.

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Some experience in your flying career which taught you a lesson may also prove one to others. Write about it for the News Letter under "And I Learned About Flying From That."

LIEUT. COLONEL WILLIAM F. VOLANDT

Lieut. Colonel William F. Volandt, Air Corps, now on duty as Chief of the Procurement Section, Materiel Division, Wright Field, Dayton, Ohio, was born at Fort Assiniboine, Montana, October 8, 1879. He received his education in the grammar schools, high school and commercial school in Washington, D.C. For a period of six years, from October 6,1898, to October 7, 1904, he served as a Private, Acting Hospital Steward, and Sergeant in the Hospital Corps, U.S. Army. He then entered the service of the government in a civilian capacity, and for a period of nearly twelve years, from September, 1905, to March, 1917, he was on duty in the Quartermaster's Office at Fort Myer, Va., during the last five years of which he was the chief clerk of that office.

Commissioned a 1st Lieutenant in the Aviation Section, Signal Officers Reserve Corps, February 12, 1917, Colonel Volandt was, on March 25, 1917, assigned to active duty at Chandler Field, Essington, Pa., where he served as Adjutant until August 13, 1917, and as Ordnance Officer to November 12, 1917. During the entire period of his stay at Chandler Field, he performed the additional duties of Supply Officer, Signal Corps, and Quartermaster.

Transferred to Gerstner Field, Lake Charles, La., he was on duty as Supply Officer, Disbursing Officer and Signal Officer until January 8, 1919. He commanded the post for five weeks during November and December, 1918.

On December 14, 1918, Colonel Volandt reported for duty in the Office of the Director of Military Aeronautics, Washington, D.C., and he was assigned to the Supply Division and placed in charge of the Property Accounting Branch. From April 25th to August 7, 1919, he was Chief of the Finance Division, Supply Group. He served as a member of the Board of Contract Review and as a member of the Claims Board to October 10, 1919. He was Assistant Chief of the Liquidation Division, Air Service, from October 10, 1919, to April 9, 1920, and thereafter Chief of the Liquidation Division to October 13, 1920. He next served as Chief of the Finance Contact Division to November 25, 1921. On September 21,1920, he was appointed Contracting Officer for the Air Service at Washington, D.C. On October 19, 1921, he was designated as Officer in Charge of all records referring to litigation on war contracts for or against the government.

Colonel Volandt served as a member of the Around-the-World Flight Committee, during 1924, in connection with the handling of financial matters related thereto, and he received the official commendation of the Chief of the Air Corps for the thoroughness of his work.

Transferred to Bolling Field, D.C., in June, 1924, Colonel Volandt served at various times as Supply Officer, Consolidated Mess Officer, Post Exchange Officer, Adjutant and Personnel Adjutant until June, 1925, when he was assigned to McCook Field, Dayton, Ohio, for duty as Contracting Officer of the Engineering Division. He was stationed at this field and later at Wright Field, Dayton, Ohio, until August 13, 1928, and was then transferred to the Philippine Department, where he was on duty at the Philippine Air Depot at Nichols Field as Purchasing and Contracting Officer for the Air Corps in the Philippine Department until July 1, 1930.

Upon his return to the United States, he was, on September 26, 1930, assigned to the Finance Division, Office of the Chief of the Air Corps, Washington, D.C., as Assistant Chief and later as Chief of that Division, also Fiscal Officer.

Colonel Volandt at various times received official commendation for the efficient and thorough manner in which he handled the duties of his office. He was transferred to his present station, Wright Field, in November, 1934, and was appointed Purchasing and Contracting Officer for the Air Corps at the Materiel Division. He served as Assistant Chief of the Procurement Section of the Materiel Division until July 1, 1937, when he was appointed Chief of that Section.

Colonel Volandt was commissioned in the Air Service, Regular Army, as a Captain, October 1, 1920, to rank from July 1st of that year. He was promoted to Major on October 1, 1930, and to Lieut. Colonel (temporary) June 16, 1936.

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LIEUT. COLONEL ERNEST CLARK

Lieut. Colonel Ernest Clark, Air Corps, now on duty as Air Officer of the 3rd Corps Area, Baltimore, Md., was born at Terre Haute, Ind., December 13,1884.

For a period of three years from March 15, 1899, he served as an enlisted man in the 10th U.S. Infantry, being discharged as a Sergeant. Reenlisting on July 31, 1902, he was assigned to Company G, 20th Infantry, and he served therewith until discharged by purchase, as a Corporal, August 24, 1903. While with the Infantry, he saw service in Cuba.

From 1907 to 1917, Colonel Clark served with the Indiana National Guard, being commissioned a second lieutenant on February 24, 1908, and promoted to

1st Lieutenant on December 30, 1914. He was on duty as aide-de-camp to Brigadier General E.M. Lewis, the Commanding Officer of the Indiana Brigade, from July 15, 1916, to February 1, 1917, at which time this brigade was in the Federal service on the Mexican Border.

In March, 1917, Colonel Clark was authorized by the Militia Bureau at Washington, D.C., to take the course in aviation at the Signal Corps Aviation School at Rockwell Field, San Diego, Calif. He completed this course and qualified for the rating of Junior Military Aviator in July, 1917.

He received appointment as temporary 1st Lieutenant, Signal Corps, U.S. Army, on November 14, 1917, and was officially rated as Junior Military Aviator on the same date. He continued on duty at Rockwell Field, serving as Assistant to the Officer in Charge of Flying until his transfer to March Field, Riverside, Calif., for duty as Officer in Charge of Flying. While on duty at Rockwell Field, he established the auxiliary flying field at Otay Mesa, then known as "East Field," and had direct charge, and was responsible for, all flying at this field.

At March Field, Colonel Clark not only established the course of flying instruction thereat, but made an enviable record in having given 28,000 hours of instruction to flying cadets without a fatality.

In March, 1919, Colonel Clark assumed the additional duty of commanding officer of the Flying School Detachment, and for a number of months he also served as Executive Officer of the field. During the summer months of 1920 he was in charge of Forest Fire Patrol operations.

Transferred to Chanute Field, Rantoul, Ill., in April, 1921, Colonel Clark was stationed at this field until October 6, 1927. During this period, his duties were varied in character. He commanded the Air Service Technical School Detachment, was Executive Officer of the field, Intelligence Officer, Provost Marshal, Post Operations Officer, Engineering Officer and Meteorological Officer. For a number of years he commanded the 15th Observation Squadron.

At his next station, Langley Field, Va., Colonel Clark was Post and Wing Operations Officer, Post Airways Officer, and Post Information Officer to July, 1928. He was then assigned to the command of the 59th Service Squadron, 2nd Bombardment Group. For several months he was in temporary command of the 2nd Bombardment Group.

Transferred to Bolling Field, D.C., in February, 1929, he was placed in command of the Air Corps Detachment thereat. For brief periods he served as Executive Officer and Commanding Officer of the Field.

In June, 1931, Colonel Clark arrived in the Hawaiian Department and assumed command of the 18th Pursuit Group at Wheeler Field, Schofield Barracks, T.H. He served in the Hawaiian Department for a period of over four years and, in November, 1935, he reported for duty with the 1st Pursuit Group at Selfridge Field, Mt. Clemens, Mich.

On March 19, 1937, he began his present duties as Air Officer of the 3rd Corps Area at Baltimore, Md.

Colonel Clark was commissioned a Captain in the Air Corps, Regular Army, on September 23, 1920. He was promoted to Major on March 1, 1931, and to Lieut. Colonel (temporary), March 12, 1935. He held this temporary rank until September 3, 1935, and was reappointed to this temporary rank on June 22, 1936.

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23RD BOMB. SQUADRON GOES INTO THE FIELD

The 23rd Bombardment Squadron, Luke Field, T.H., after a rousing Fourth of July celebration, initiated field activity for the 5th Composite Group for the new fiscal year by moving to Bellows Field on July 6th for two weeks' field duty. With all of the Keystone airplanes of Luke Field assigned to them, the Squadron made short work of the move across the Island of Oahu.

The camp started off in the rain, but after a day or two of wet weather, ground gunnery activities really got under way. The Squadron Armament Section had preceded the main body and had the pistol and the 1,000-inch machine gun range all set up with enough targets made to last during the period of the camp.

Although all planes flew all morning, the main activities of the camp centered around the gunnery ranges. During the period of the encampment every man in the squadron completed firing the pistol course, the machine gun course on the 1,000-inch range, and the anti-aircraft firing at two targets. In addition to the Squadron's ground gunnery, crews for airdrome defense were given a comprehensive practical course in the setting up and operation of the ground machine gun.

On July 19th, the Squadron regretfully broke camp and headed by air and motor transport back to Luke Field - its first phase of training in the new fiscal year completed.

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GENERAL DRUM LEAVES THE HAWAIIAN DEPT.

"It was with deep regret," says the News Letter Correspondent of the Hawaiian Air Depot, "that the Depot bade Aloha to Major General Hugh A. Drum, who sailed for the mainland on July 30th. The General was very much 'air-minded' and will be long remembered for his work in building up the Air Corps in this Department."

THE TRANS-POLAR FLIGHT TO THE UNITED STATES BY THE RUSSIAN AVIATORS

Although much has appeared in the press in this country regarding the recent flight of the Russian aviators Gromov, Yumashev and Danilin from Moscow to the United States, via the North Pole, it is believed News Letter readers will be interested in reading another account of the flight which appeared in the weekly edition of the 'Moscow News" of July 21st. This newspaper is printed in the English language for the English-speaking people in the Soviet Union and throughout the world. The account of the flight in this newspaper is as follows:

'The shortest air route between the USSR and America, by way of the North Pole, has again been covered by an ANT-25 plane, its crew headed this time by Hero of the Soviet Union M.M. Gromov, and with Major A.B. Yumashev as second pilot and S.A. Danilin as navigator.

The airplane left Moscow July 12, at 3:21 a.m. Moscow time, and landed in San Jacinto, California, July 14. It was in the air 62 hours, 17 minutes. The distance between the starting point and the point of landing exceeds 10,200 km.; the distance covered by the plane is equal to approximately 11,500 km. Thus the ANT-25 has broken the world long-distance record.

The route was as follows: Moscow - Kolguyev Island-Cape Stolbovoi (Novaya Zemlya) - Franz Josef Land - North Pole - Patrick Land - Banks Land. From there the plane flew along the 120th meridian over Canada, crossing the Rocky Mountains to the Pacific Coast via San Francisco and Los Angeles, and landing near the town of San Jacinto (California) midway between Los Angeles and San Diego.

During the flight the airplane flew more than 5,500 km. over oceans, seas and ice.

The plane left Moscow under favorable meteorological conditions, but beginning with Zagorsk flew above dense clouds and fogs and was twice forced to pass through heavy cloud banks, flying blind at times. Over the Kara Sea, the weather cleared up. However, beginning with Franz Josef Land, the airplane flew over fogs and unbroken clouds and crossed a cyclone in the region of the 85th and 86th parallels, piercing the clouds at a great altitude, and flying blind. The plane emerged from the cyclone in the region of the North Pole. Up to the North Pole the airplane encountered head winds with a velocity of 30 to 40 km. an hour.

Clouds and Fogs

From the North Pole to southern California, the airplane flew under favorable weather conditions and with accompanying winds. Flying to the Rocky Mountains along the 120th Meridian, it crossed them amidst thick clouds and heavy rains. When ice began to crust the airplane, it sharply changed its course and emerged on the Pacific Coast. Thereupon the flight continued under conditions of unbroken clouds and fogs right up to Los Angeles.

The same constructors, engineers, mechanics and motor specialists who prepared Valery Chkalov's* plane put Gromov's into condition. All the work at the airdrome was under the supervision of engineer E.K. Stoman, with a special staff headed by V.I. Chekalov in charge of all arrangements for the flight.

'A special fuel for the motor, which was built and prepared for the flight at the Frunze Plant, was worked out at the Central Institute of Aviation Motor Construction,' Chekalov pointed out. 'Plants of the All-Union Precision Instruments Trust manufactured and supplied the airplane with the latest aero-navigation instruments.'

In preparing the second ANT-25 plane, the experience of Chkalov's flight was taken into consideration. The airplane was somewhat lightened by means of interior re-equipment and, chiefly, by replacing certain metal with lighter metal or wood. The oxygen supply on Gromov's plane was treble that carried by Chkalov. A much larger quantity of anti-freeze liquid, used to prevent the formation of an ice crust on the propeller, was taken.

Radio communication between the plane and the earth were organized in a new way, Chekalov stated. On the territory of the Soviet Union, the messages from the ANT-25 plane were received by about 20 polar stations and all vessels in the White and Barents seas and the Arctic Ocean. All these stations immediately relayed the information received from the plane to the central short wave station situated near Moscow. This was the only Soviet radio station authorized to maintain direct communications with the ANT-25 and to transmit information to it.

The powerful Comintern Station, operating on long waves, was also prepared, in an emergency, to contact the plane at five minutes' notice from the staff of the flight. The radio station on Dickson Island worked simultaneously with the central station. This was arranged so that should complications arise in the central station's receipt of transmission, the plane would still be insured of the necessary weather information.

Radio stations situated on the territory of Canada and the United States received reports from the plane and immediately relayed them to two central stations situated in Anchorage (Alaska) and Seattle (USA). Only these two stations were authorized to maintain direct two-way communications with Gromov's plane.

Radio communications between America and the USSR were organized in a new fashion, with radio-telephone communications between Nome and Anadyr and also between Seattle and Khabarovsk to be established in case of emergency. Such communication would have made it possible for Moscow to receive very rapidly the necessary information on the movement of the plane. In addition, radio-telephone communications between Moscow and America were established.

'Our meteorologists carried out a great deal of work in drawing up exact weather charts and in supplying the crew with all necessary information on the weather enroute,' said Chekalov. 'They made careful observations of the weather in the Central Polar Basin, and studied it for a considerable time along the entire route. They received much assistance in this matter by the drifting polar station near the North Pole.

The flight of Gromov, Yumashev and Danilin undoubtedly provides valuable new material for the study of the great air route between the USSR and North America,' he concluded.''

*Ed Note: V.P. Chkalov, G.F. Baidukov and A.V. Belyakov blazed a non-stop sky trail from Moscow over the North Pole to the United States and landed at Vancouver, Washington, on June 20th, last.

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THE RUSSIAN ANT-25 AIRPLANE

In the same issue of the 'Moscow News," in which the previous article appeared, there is also an article by Aviation Engineer E.K. Stoman, describing how the ANT-25 was evolved into the present record-breaking airplane. Mr. Stoman says:

"Five years have passed since the ANT-25 plane made its first appearance at the testing station. I remember this machine as it first took to the air. Its flying qualities have been perfected under my supervision. I was charged with preparing the ANT-25 for long-distance flights. I am acquainted with every detail of the history of this splendid airplane, which has made Soviet aviation famous throughout the world. In the last five years, the machine has gone through a complex period of technical improvement and has been changed almost beyond recognition. Only the strong "bones" of the skeleton of the former ANT-25 have remained and nothing else.

One recalls with a smile the amount of trouble we had with the radiators, which were once placed in the wings of the plane. For a long time the engineers worried their heads off trying to improve the system of cooling the motor. In the end it was decided to dispense with wing radiators altogether, replacing them by a single honeycomb radiator installed in the tunnel next to the motor.

The conduct of the heavily laden machine in taking off was, as yet, a total enigma to us. Technical literature furnished very little material on this question. In foreign magazines we found many reports of unsuccessful attempts of overloaded machines to take off, but few reliable calculations as to how to take a machine into the air with safety.

After making a series of cautious experimental take-offs, we found the key to the solution of the problem. It turned out that the take-off of a heavily loaded machine requires exceptional foresight. The plane runs for a long time along the runway, slowly picks up speed and is difficult to control while on the ground. It wiggles and tries to jump off the runway - this means an inevitable crash. The most unexpected surprises may be in store. A crash may occur owing to the fact that the air pressure in one of the wheels of the landing gear is greater than in the other. If the bearings in one of the wheels are subject to greater friction than in the other, disaster may follow. Unevenly pumped air and oil shock-absorbers also present a danger. It was necessary to regulate the wheels of the landing gear and the back wheel in such a way that the machine, at least during the first 300 or 400 m., should drive along the runway with ideal accuracy.

The secret of the take-off of the ANT-25 has now been finally solved. Chkalov and Gromov made perfect starts.

Aviation technique has accumulated much theoretical experience which makes it possible quickly and surely to pick out a propeller with the highest coefficient of efficiency. But all the customary calculations proved to be unacceptable in the choice of a propeller for the ANT-25. Propellers suitable for taking off were found not to be sufficiently good in flight. On the contrary, propellers which worked efficiently in the air were inefficient in taking off. But long experiments with dozens of propellers of various types finally brought success.

In its 'youth,' the ANT-25 was a very capricious machine to control. Gromov, who tested it, had his hands full and more than once was in danger. A number of parts had to be replaced before the plane finally acquired stability and became comparatively easy to control.

The tanks still have room for more gasoline than is taken for long-distance flights. About two tons more could be poured into them, but this is made impossible by the insufficient power of the motor. If not for the motor, the distance of a flight by the present ANT-25 could be extended to perhaps 14,000 km. instead of the original 7,500 and the present 12,000 to 13,000 km.

The first serious test undergone by the ANT-25 was the 75-hour flight made by Gromov, Filin and Spirin over a closed circuit in 1934. This flight, which was actually a world record, finally convinced the designers of the correctness of their calculations. Nevertheless, the machine at that time still had a number of serious defects.

The cabin of the plane in which Chkalov, Baidukov and Belyakov flew to the United States and the cabin of Gromov's plane were completely reequipped this year. Air-heating apparatus was installed. Warm air enters the cabin, heating and ventilating it. Air-proof partitions were also installed to prevent cold air from entering the cabin from the wings.

For the first time in the history of Soviet aviation, an anti-freeze liquid was placed on the propeller of Chkalov's plane this year. The formation of an ice crust on the propeller is particularly dangerous. It destroys the balance of the blades and serves as the prime cause of motor vibrations. It is sufficient for one of the blades to become 20 grams heavier than the others in order to upset the work of the propeller and motor system and cause disaster.

According to information received from Chkalov, the anti-freeze substance on the propeller was extremely useful. But the amount of anti-freeze (a liquid which the apparatus sprays over the surface of the blades through thin tubes) was insufficient. Gromov's machine was equipped with 30 liters of anti-freeze. The apparatus uses up only three drops a second. According to the most moderate calculations, the quantity of anti-freeze should have its effect for over two consecutive hours.

A very complex problem was presented by the distribution of the numerous air navigation instruments and control gauges. In Gromov's plane 23 different instruments are mounted on a single board in front of the first pilot. The total number of instruments carried by the plane is 50.

It is doubtful whether any other single-motored plane has as many instruments. In the ANT-25, literally every known aviation instrument in the world has been assembled. With each new flight the machine receives some new equipment. Incidentally, I recall that in 1934, when Gromov made his flight over a closed circuit, there was only one instrument on the plane for fixing its course, namely, a magnetic compass. What strides our industry producing air navigation instruments have made since then!

Chkalov, Baidukov and Belyakov in their conclusions on the flight to America referred to the insufficient supply of oxygen, although it was double their supply on the Arctic flight last year. For this reason a vessel containing liquid oxygen was put on Gromov's plane in addition to balloons containing compressed oxygen. We believe such an apparatus began to be used in America. In European aviation practice, liquid oxygen is still little known. The vessel looks like a samovar, which is what we have named it. It is enough to open the tap in order that the liquid oxygen be converted into gas, and pass through a common pipe to the tubes and individual masks of the flyers. The quantity of oxygen carried by Gromov's plane was sufficient for 24 hours' flight in rarefied air.

The work of the radio set largely determines the success of a long flight over the Arctic. After last year's flight, Chkalov and his crew came to the conclusion that the radio apparatus was adversely affected by the electric disturbances caused by the system of fuel ignition in the motor cylinders. The work of the magneto caused a loud crackling in the receiver. In some cases reception was impossible. Now these interferences have been eliminated; the entire system of fuel ignition has been carefully screened off by a complete metal envelope. The quality of the radio contact - this has been confirmed by Chkalov's flight to the United States - has greatly improved.

Rubberized balloons, filled with air, in order to enable the airplane to float in event of a forced landing on water, were constructed. However, to the disappointment of engineer N. Lebedev, who displayed wonderful ingenuity in designing the balloons, after Chkalov's flight to the United States it appeared that there was no real need for them and they were removed from the Gromov plane. For the same reason Gromov's crew rejected the rubber life-boat.

Work on the ANT-25 has served as a splendid, I may say, incomparable school for the workers of the Central Aero-Hydrodynamic Institute, of the Institute of Aviation Motors and of the many factories which participated in preparations for the flight. Scores of designers, engineers, mechanics, physicists and chemists have enriched their knowledge. If it were necessary now to build an airplane for long-distance flights, there can be no doubt that it could be made to have a radius of 20,000 km. (12,427 miles). I am convinced that the new Soviet airplane for long-distance flights will be unquestionably a monoplane with a low wing of great length. The plane will carry two motors. In speed, it will considerably exceed the ANT-25, and it must be ideally suited for flights at an altitude of 6,000 to 8,000 meters. The cabin will, apparently, have to be sealed hermetically. The experience gained by our industry in the construction of cabins for stratostats will be of great use to aviation.

In such a plane Soviet flyers will be able to make a round-the-world flight with a single stop. I can foresee new victories for Soviet aviation in the struggle for long distance flights."

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THE ENGINE IN THE RUSSIAN ANT-25 AIRPLANE

Having shed some light on the airplane used by the Russian aviators in their flight from Moscow to the United States last July, it may be of interest to learn something regarding the motor with which this plane was powered - the AM-34.

The constructor of this motor, A.A. Mikulin, writes as follows in the issue of the 'Moscow News," previously referred to:

"For many years, inventors have suggested numerous diverse and often quite eccentric designs for airplane motors which, it would seem, might prove to be a turning point in the technique of motor construction. Motors with all possible arrangements of the cylinders have been proposed: In the form of an X, a square, a triangle parallel to the shaft, and so on. However, not one of these ideas proved to be of any value. The main path of development in world motor construction is still the fan or star-shaped arrangement of the cylinders.

After watching the development of the foremost firms in the world, such as the Rolls-Royce in England, Curtiss-Wright in America, Hispano-Suiza in France, and after analyzing their methods of work, we find it evident that these basic types have been in the process of being constantly improved upon.

One of the new units added to the motors during their modernization in recent years is the impeller, which makes it possible to raise the power of the motors 50 per cent at an altitude of 3,000 to 4,000 m., and thus increase the speed of the plane at this height by about 15 per cent.

The motor AM-34 is entirely of Soviet make and incorporates the leading principles in world airplane motor technique. It was designed in 1930 by a group of engineers of the Airplane-Motor Research Institute.

A great amount of research work on the combustion of fuel in the cylinders and also the action of the various parts preceded the designing of the motor.

The design included very far-sighted construction ideas, which were developed over a period of six years and mastered at the plant for serial production. This resulted in a constant increase in the power, endurance and reliability of this motor.

The motor has demonstrated its qualities in a number of record flights, including the non-stop flight of M.M. Gromov, Hero of the Soviet Union, over a closed circuit for 75 hours, the Arctic flight of V.P. Chkalov, G.F. Baidukov and A.V. Belyakov in 1936, and their recent flight from Moscow to North America, and the present flight of Gromov.

Besides its dependability, the AM-34 motor, because of the special arrangement of its parts, is very economical, in contrast to a number of modern motors of its class. Whereas an average fuel expenditure of 240 grams per hp. per hour is considered normal, the AM-34 consumes only 200-205 grams per hp. per hour. This small fuel expenditure is combined with very great power, which exceeds 1,000 hp.

One of the parts of the AM-34 which is an obligatory installation is a special device against ice-formation during flights in the Arctic.

Following a unified Government program, a number of research institutes are working upon the task of further improving the AM-34. Many institutes are engaged in a study of new sorts of high-quality fuels and selective lubricating oils."

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91ST OBSERVATION SQUADRON ACTIVITIES

According to the News Letter Correspondent from Fort Lewis, Wash., the "Fog Busters" of the 91st still carry on in the great northwest. "Thanks to early training in the Golden Gate Fog Belt at old Crissy Field, the weather conditions here were not so disconcerting to our personnel on transfer to this station," he says, and he then adds: "Our records for the fiscal year 1937 show a loss of 57½ scheduled flying days because of weather. Present-day airplanes and instruments allow for take-offs, landings, and flights in inclement weather, but 14,000-foot mountains, 200-foot pine trees, 100-foot ceilings, and 500-foot visibility do not result in 100% completed observation missions.

Despite the handicap of lots of bad weather, the organization flew a total of 5,384 hours during the year, an average of 365 hours per pilot. Cooperative missions accounted for 1,231 hours of the total.

The fiscal year's flying was consummated at Port Angeles, Washington, when the Squadron fired its tow-target aerial gunnery over the Straits of Juan de Fuca. There was a lot of fishing done during off duty hours but few fish brought into camp. Colonel F.E. Galloway, on his first venture after "Salar" the salmon, managed to bring a 33½ and a 28-pounder to gaff. If there were any larger fish caught, they were not displayed in camp, as no one dared outdo the C.O.'s record.

Flying during the month of July was in fulfillment of War Department Training Directive. Missions during August are in preparatory training for the 4th Army Maneuvers to be held at Fort Lewis August 17-31, at which time there will be a concentration of approximately 14,000 Regular Army, National Guard, and Organized Reserve troops.

Lieut. Colonel Charles B. Oldfield is in command of air activities at Fort Lewis, and Major Guy L. McNeil commands the 91st Observation Squadron.

Lieut. Colonel Floyd E. Galloway departed on August 4th for the Command and General Staff School at Fort Leavenworth. The entire command regrets his departure from this station.

A ground and aerial review for the recently arrived 3rd Division Commander, Brigadier General Alfred T. Smith, was held on August 6th.

The Air Corps personnel at this station extend an invitation to all airways transient flyers to drop in and visit us."

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AIR CORPS OFFICERS ON GEN. STAFF ELIGIBLE LIST

In the recently published list of Army officers who have been placed on the General Staff Corps eligible list, the names of the following Air Corps officers appear, viz:

Lieutenant Colonels

Crom, William H.
Howard, Clinton W.
Kepner, William E.
McClelland, Harold M.
Sorenson, Edgar P.

Majors

Cannon, John K.
Clark, Harold L.
Davidson, Joseph H.
Eaker, Ira C.
Fairchild, Muir S.
Gaffney, Dale V.
George, Harold L.
Gothlin, Oliver P.,Jr.
Halverson, Harry A.
Hough, Romeyn B.
Kiel, Emil C.
Larson, Westside T.
Tooher, Bernard J.
Upston, John E.
Vanaman, Arthur W.
Waller, Alfred E.
Wolfe, Kenneth B.

Captains

Caldwell, Charles H.
Chidlaw, Benjamin W.
Crawford, Alden R.
Cumberpatch, James T.
Douglass, Robert W.,Jr.
Dulligan, John H.
Fair, Ford L.
Ferguson, Homer W.
Ferris, Carlisle I.
Mayhue, Don W.
Moon, Ernest S.
Old, William D.
Oliver, Robert C.
Quesada, Elwood R.
Shea, Augustine F.
Snavely, Ralph A.
Thomas, Charles E.,Jr.
Twining, Nathan F.
Weikert, John M.
Whitten, Lyman P.
Williams, Robert B.

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AIR RESERVE OFFICERS PLACED ON ACTIVE DUTY

The following-named second lieutenants of the Air Reserve have been placed on active duty at the Air Corps stations indicated for a period of three years, viz:

Frank Phipps Smith, Clarksdale, Miss., to Mitchel Field, N.Y., to August 24, 1940.

Joseph Adolph Brier, Riverside, Calif., to Moffett Field, Calif., to August 24, 1940.

Follett Bradley, Langley Field, Va., to Barksdale Field, La., to August 24, 1940.

John Holliday Catchings, Atlanta, Ga., to Barksdale Field, La., to September 1, 1940.

Le Grand Justin Mercure, South Rockwood, Mich., to Randolph Field, Texas, to September 9, 1940.

Joseph Samuel Morris, Waycross, Ga., to Randolph Field, Texas, to September 9, 1940.

Hugh O'Daniel, Louisville, Ky., to Randolph Field, Texas, to September 9, 1940.

The Effect of Flight on the Middle Ear

(Continued from Page 2)

open or blocked. Those who have a blocking of the tube should be examined for chronic infection of the ear, sinuses, nose and Pharynx, the mouth of the tube inspected for mechanical obstructions and the eustachian tube catheterized, if necessary. When any of these conditions are found and corrected, it is likely that the tube will become normal. Persons examined during periods of an acute infection of the upper respiratory tract should be re-examined after the infection has subsided before a final decision is made.

Probably the most useful prophylactic measure in all cases is proper instruction of the individual concerned. As long as the open condition of the eustachian tube is under voluntary control there is no reason why any person in command of his faculties need experience difficulty at any rate of ascent or descent possible in present commercial aircraft. A simple explanation of the functioning of the eustachian tube, followed by instructions as to how to ventilate the middle ear, when to ventilate it and how frequently this is necessary should suffice. Probably the simplest maneuver to actuate the normal eustachian tube is to swallow. It may also be accomplished by yawning, by singing, by shouting, by autoinflation and by contracting certain of the throat muscles. The last named defies description and can be learned only by practicing the suppression of a simulated yawn, at which time a roaring in the ears will indicate when the effort is successful.

Since the average person swallows involuntarily about every sixty to seventy-five seconds, it can be seen that a rate of climb or descent of 200 feet per minute will usually cause no discomfort, 500 feet per minute slight discomfort and 1,000 feet per minute moderate discomfort even though no effort is made to ventilate the middle ear artificially. Descents above 4,000 feet per minute may catch an individual unaware and create a vacuum of the middle ear which it is impossible to relieve by any method except a return to higher altitudes.

Chewing gum, eating, drinking or inhaling oxygen reduces swallowing to intervals of from one to thirty seconds. Sleeping and comatose individuals swallow at increased intervals and present a serious problem.

The allowable rate of ascent and descent of commercial airplanes is set by the Department of Commerce at 300 feet per minute, and some such companies limit themselves to 200 feet per minute, although unusual conditions such as weather may require that both of these rates be exceeded to insure the safety of the flight. Those who are suffering from either temporary or permanent blocking of the eustachian tube should be enjoined from flying except under controlled conditions of gradual changes of altitude through a maximum range not to exceed 2,000 feet. Those with an acute infection of the upper respiratory tract who insist on aerial flights should be prepared by gargling hot salt water or by having an oil spray directed well back into the nasopharynx, followed by the instillation or inhalation of atropine, ephedrine or benzedrine compounds.

SUMMARY

A new clinical entity is presented which consists of a traumatic inflammation of the middle ear caused by a pressure difference between the air in the tympanic cavity and that of the surrounding atmosphere, commonly occurring during changes of altitude in airplane flights and characterized by inflammation, discomfort, pain, tinnitus and deafness."

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RANDOM NOTES

The 33rd Pursuit Squadron, Langley Field, Va., is sending five pilots along with the 8th Pursuit Group to the Cleveland Air Races, and each morning finds 18 PB-2A's busy with aerial work. The Scribe of the 33rd says: "We hope to do our part in making the Air Show a big success and look forward to an enjoyable trip."

Announcing that the matrimonial flurry which recently struck the 37th Attack Squadron, Langley Field, claimed another victim lately when Lieut. Earl Willoughby returned from a two weeks' leave in California with a Los Angeles bride, the News Letter Correspondent adds that "This will, no doubt, cut Lieut. Willoughby's cross-country time down to a minimum this fiscal year, since his cross-country now will have to be approved through two different headquarters."

"It has been reported," says the News Letter Correspondent of the Hawaiian Air Depot, "that pilots at Luke and Wheeler Fields are considering the formation of an association of 'goon-dogglers.' The members will be those privileged to take the goons, C-33's to you, from here to there and return. Now if we can get a 'Jeep' and a couple of Windmill Salesmen, we will be on a par with any organizatio in the United States."

Majors (temp.) Neal Creighton and Alonzo M. Drake, Air Corps, were promote to the permanent rank of Major, to date from August 3rd and August 7, 1937, respectively.

OBITUARIES

Air Corps personnel were greatly shocked at the untimely and tragic death of Colonel Wm. C. McChord, Air Corps, and his passenger, Staff Sergeant Michael J. O'Connell, as the result of an airplane accident at Maidens, Va., 29 miles west of Richmond, on the morning of August 18th, last. Colonel McChord, piloting an A-17 Attack plane, was en route from Bolling Field to Randolph Field, Texas, and was apparently trying to make a forced landing when the accident occurred.

To the Air Corps in general, Colonel McChord's death constitutes a distinct loss, and those who knew him well realized fully his ability and professional attainment and admired the initiative, independent thought and frank expression of opinion which characterized his service and which led his brother officers to rely so much upon his experience and helpful advice.

A native of Lebanon, Ky., where he was born December 29, 1881, Colonel McChord had been affiliated with aviation since the World War. Previous to that time he served with the Cavalry, in which branch he was commissioned a second lieutenant on June 14, 1907, following his graduation from the U.S. Military Academy. He received his flying training at Rockwell Field, Calif., and was rated a Junior Military Aviator, May 31, 1918. After completing a course in Bombardment Aviation at Ellington Field, Houston, Texas, and commanding for brief periods of time Park Field, Tenn., and Gerstner Field, La., he was transferred in March, 1919, to the Office of the Director of Air Service, Washington, D.C., where he served in various capacities, such as duty in the Finance Section of the Supply Group, as a member of the Air Service Claims Board, as Assistant to the Chief of the Materials Disposal and and Salvage Division of the Supply Group, and as Assistant to the Chief of the Property Division of the Supply Group.

For a period of two years, from July, 1920, Colonel McChord served as Air Officer of the Central Department (later the 6th Corps Area). He then completed the course of instruction at the Air Corps Tactical School and the Command and General Staff School. He then commanded Chanute Field, Ill., and was Commandant of the Air Corps Technical School at that field until early in 1928, when he was transferred to the Advanced Flying School, Kelly Field, Texas, where he completed the Special Observers' course, receiving the rating of "Airplane Observer" as of June 25, 1928.

Following his graduation from the Army War College, Washington, D.C., Colonel McChord served as Instructor at the Command and General Staff School for four years. He was then transferred to the Panama Canal Department for duty as Commanding Officer of the 19th Composite Wing. In October, 1935, upon the completion of his foreign service tour, he was assigned to duty in the Plans Division, Office of the Chief of the Air Corps, Washington, D.C. Later, he was assigned as Chief of the Training and Operations Division.

Funeral services for the deceased Air Corps officer were held on the afternoon of August 20th at the Chapel at Fort Myer, Va.

Staff Sergeant Michael J. O'Connell, Air Corps, a native of New York City, was born on March 2, 1900. He enlisted in the Army on August 16, 1919, and served with the 15th Cavalry to July 27, 1921, and with the 3rd Cavalry to March 13, 1925. Reenlisting a week later, his Army service since that time was with the Air Corps. He served with the 1st Observation Squadron to November 5, 1929, when he purchased his discharge. He enlisted again on July 9, 1930, and was stationed at Bolling Field, D.C., until the date of his death. He was appointed Corporal in December, 1930; Sergeant in July, 1931, and Staff Sergeant in June, 1937. In April, 1927, he graduated from the Engine Mechanics Course at the Air Corps Technical School at Chanute Field, Ill.

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on August 24th, 2nd Lieut. Robert C. Wood, of Haynesville, La., a member of the Air Corps Reserve, and Flying Cadet Frank Fisch, a student at Randolph Field, and who hailed from Mansfield, Ohio, were instantly killed when the training ship in which they were flying crashed in flames two miles north of Schertz, Texas.

Lieut. Wood was born November 3, 1911, at Pine Bluff, Ark. He graduated in 1931 from the Monticello, Ark. A. & M. College; attended Ouachita College, Arkadelphia, Ark., for half a year, and graduated from the Louisiana College, Pineville, La., in 1935, with an A.B. degree. For a period of two years he was a member of the 156th Infantry, Louisiana National Guard.

Appointed a Flying Cadet in the Air Corps, he completed the course at the Primary Flying School, Randolph Field, Texas, October 15, 1935, and the advanced course at Kelly Field, Texas, on February 15, 1936, when he was rated an "Airplane Pilot" and assigned under his Cadet status to duty with the 77th Pursuit Squadron at Barksdale Field, La. On March 1, 1937, he was appointed a second lieutenant in the Air Reserve, and he remained at Barksdale Field until June 18th, last, when he was transferred to Randolph Field, Texas, for duty as Flying Instructor.

Flying Cadet Frank Fisch was born at Chicago, Ill., August 6, 1914. He attended Newman School and Mansfield, O. High School (1920-1932) and the Ohio State University, Columbus, Ohio, for four years. Receiving an appointment as a Flying Cadet in the Air Corps, he began his training at the Primary Flying School, Randolph Field, Texas, in March, 1937.

Cadet Fisch was a member of the varsity football squad, Ohio State University, for three years.

The sincere sympathy of the Air Corps is extended to the bereaved families of these men who lost their lives in the service of their country.

BRANCH AIR CORPS TECHNICAL SCHOOL AT DENVER

The Army Housing Bill, which authorizes among other things the establishment at Denver, Colorado, (at the Phipps Memorial Sanitarium) of a branch of the Air Corps Technical School, Chanute Field, Rantoul, Ill., was signed by the President on August 27th. A War Department announcement states that it is expected the necessary funds for putting this authorization into effect will be contained in an early appropriation act.

Detailed plans are now being made to provide for the inauguration of courses in armament and photography at this school. While courses cannot begin until funds are appropriated, plans can now take definite shape for the move so that when funds become available prompt action may be taken to prepare students of the branch school at Denver to fill the vacancies now existing for skilled mechanics in the Air Corps tactical units.

In the near future it is expected that the War Department will move a few officers and soldiers from other stations to this new school at Denver to begin the rehabilitation of the existing buildings.

As soon as adequate facilities have been constructed at the new location, the Departments of Photography and Armament, including students and instructors now at the Air Corps Technical School at Chanute Field, will be transferred to Denver, and a corresponding increase made in the number of instructors and the number of students in the other courses remaining at Chanute Field, so that that field will remain at its maximum operating capacity.

The establishment of the branch of the Air Corps Technical School at Denver will not decrease the size of the Technical School at Chanute Field, Rantoul, Ill. The increase in the number of students in the departments which remain at Chanute Field will enlarge the present school despite establishment of the branch. The increasing demand for trained specialists in the Army Air Corps makes necessary the establishment of the branch school. World War military planes could be adequately maintained by a small crew of two or three technicians. Such planes were powered generally with but one engine, carried not more than two machine guns and only five or six instruments. Some of the largest modern Army planes call for a greatly increased crew of skilled technicians, if such planes are to operate effectively.

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MASTER SGT. MAYLON APPOINTED WARRANT OFFICER

Master Sergeant Charles Maylon, probably one of Bolling Field's oldest inhabitants, in point of service at that field, received an appointment as Warrant Officer, U.S. Army, effective September 1, 1937. Since January, 1919, his service at Bolling Field has been continuous, save for a tour of duty in the Hawaiian Department.

Sergeant Maylon was born at Gordonsville, Va., April 25, 1891. He enlisted in the regular army on September 24, 1912, serving with the 29th Infantry for three years and being discharged with character "Excellent." As a matter of fact, all of his subsequent discharges bore that notation. He saw service in Panama from March, 1914, to September, 1915. Reenlisting in June, 1916, he was assigned to the General Service, Infantry. In September, 1918, he was assigned to the 864th Aero Squadron at the Air Service Mechanics School at St. Paul, Minn., and was appointed to the grade of Sergeant. Later, on November 25, 1918, he was appointed Sergeant, 1st Class. He received his appointment as Staff Sergeant on July 1, 1920, and as Master Sergeant on September 23, 1920.

Sergeant Maylon was transferred to Bolling Field, D.C., on January 14, 1919, where he served successively with the 312th, 99th, 10th, and again with the 99th, squadrons; the 18th Headquarters Squadron; the Air Corps Detachment the GHQ Air Force, the Station Complement, and his present organization, the 14th Air Base Squadron. During his service in the Hawaiian Department in 1933 and 1934, he was on duty with the 5th Composite Group at Luke Field and later with the 18th Composite Wing Headquarters at Fort Shafter.

Sergeant Maylon holds a commission as a 2nd Lieutenant in the Quartermaster Corps Reserve.

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The following noncommissioned officers of the Air Corps are slated for retirement on August 31, 1937:

Master Sergeant Monroe Reynolds, Randolph Field, Texas.

Technical Sergeant Henry G. Hayes, Fort Lewis, Washington.

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CHANGES OF STATION OF AIR CORPS OFFICERS

To Brooks Field, Texas: Major William C. Morri
from Randolph Field.
To Maxwell Field, Ala.: Major Arthur J.
Melanson from Langley Field.
To Fort Lewis, Wash.: Major Charles M. Savage
from Rockwell Air Depot, Calif.
To Fort Bragg, N.C.: Major Neal Creighton
from Scott Field, Ill.
To Panama Canal Department: Captain Henry G.
Woodward from Wright Field, Ohio.

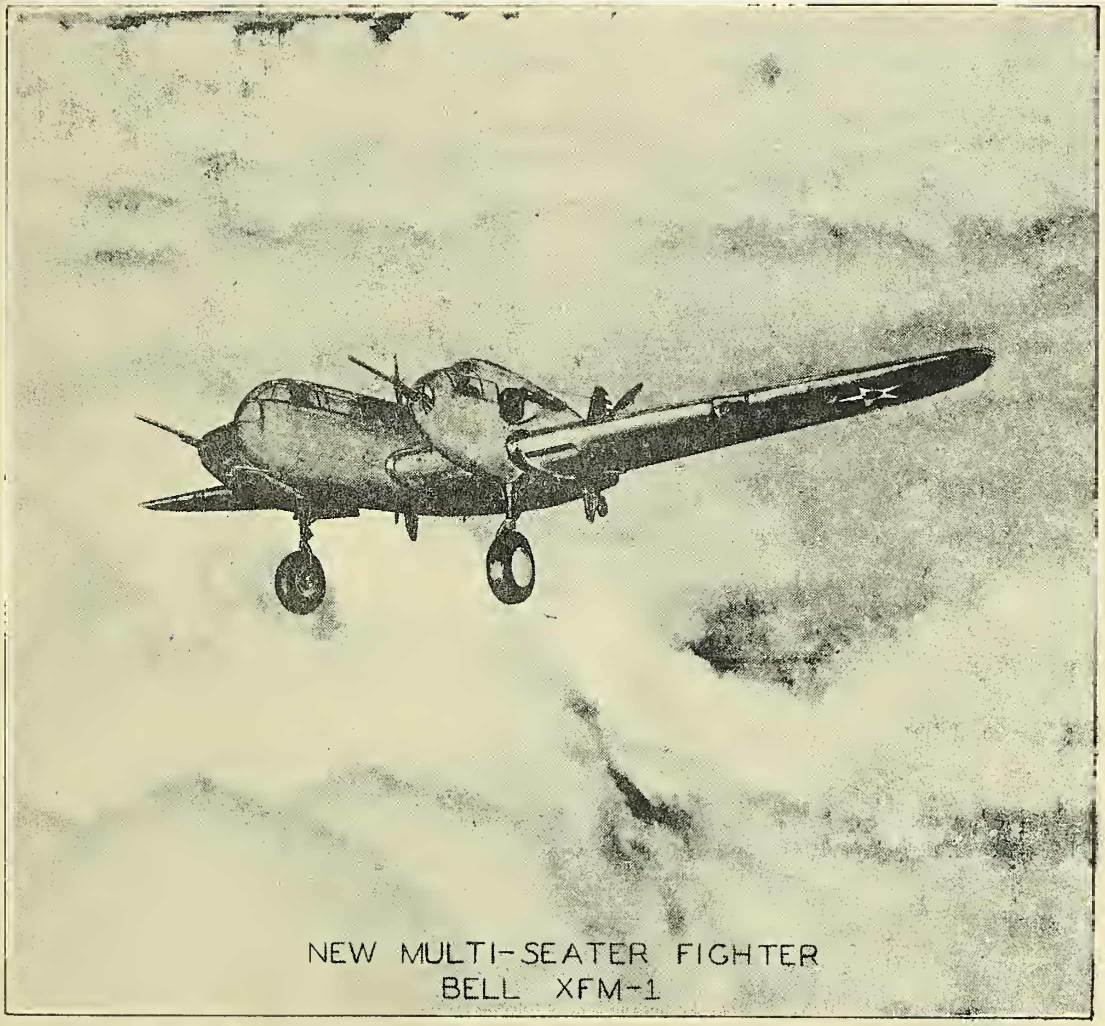
Major Charles A. Horn has been relieved from further assignment and duty with the GHQ Air Force, Mitchel Field, N.Y., and assigned to duty as Commanding Officer of the 97th Observation Squadron at that field.

Effective August 19, 1937, the following Air Corps officers were promoted to the temporary rank indicated:

Lieut. Colonel Fred H. Coleman to Colonel.
Major Orlo H. Quinn to Lieut. Colonel.
Captain George W. Goddard to Major.

2nd Lieuts. Charles Garvis Holliman, Hapeville Ga., and Victor Frank Pixey, Hammond, Ind., both members of the Air Reserve, were placed on extended active duty at Randolph Field, Texas, to September 9, 1940, as were also 2nd Lieuts. LeGrand Justin Mercure, South Rockwood, Mich.; Joseph Samuel Morris, Waycross, Ga., and Hugh O'Daniel, Louisville, Ky.

AIR CORPS NEWS LETTER



NEW MULTI-SEATER FIGHTER
BELL XFM-1

ISSUED BY
THE OFFICE OF THE CHIEF OF THE AIR CORPS
WAR DEPARTMENT
WASHINGTON

VOL. XX SEPTEMBER 15, 1937 NO 18

VOL. XX AIR CORPS NEWS LETTER NO. 18.
Information Division
Air Corps
September 15, 1937
Munitions Building
Washington, D.C.

The chief purpose of this publication is to distribute information on aeronautics to the flying personnel in the Regular Army, Reserve Corps, National Guard, and others connected with aviation.

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THE NATIONAL AIR RACES AT CLEVELAND

By an Observer from the Office, Chief of the Air Corps

Those of us who saw the National Air Races this year feel that the Army Air Corps may well feel proud of the performance of its participating units.

Many spectators said that the greatest spontaneous burst of enthusiasm and cheering from the crouds which occurred at any time during the Races was manifested when the formation of B-17's came down out of the low ceiling and passed in review before the grandstand. It was a miserable afternoon, with very low ceiling. Several commercial and military flyers, including your correspondent, landed that afternoon at Alliance, Ohio, and at other points short of the Races. To ride out the squall, the poor visibility, which was not more than a quarter of a mile at some time, did not deter the B-17's. It seems to be the general impression that that parade was one of the striking demonstrations of the whole show.

The squadrons of PB-2A's from Langley Field, led by Captain Ned Schramm, flew an excellent and precise series of maneuvers, demonstrating the remarkable maneuverability of squadrons employing the "string" formation. It also made an excellent show from the spectator point of view.

The acrobatic trio from Maxwell Field, it was generally conceded, proved worthy successors to the "Three Men on the Flying Trapeze," and they staged some original and entertaining maneuvers, all their own.

The Navy and Marine Corps flyers did excellent work. The Navy Squadron demonstrated a very high quality of formation flying, and the Marines did their usual series of acrobatic formations, concluding with spectacular bomb dropping.

An untoward and unfortunate circumstance occurred which offended the participating pilots, as well it might. The Cleveland NEWS published on Friday afternoon, September 3rd, a gossipy column by one of its reporters, which was not complimentary. As soon as Mr. Cliff Henderson saw this story, he called the NEWS, and it was killed in the later editions that same afternoon. Lieut. Colonel A.H. Gilkeson, Army Air Corps representative at the Races, immediately took steps to bring the matter to the attention of the National Air Races authorities, and the Chief and Assistant Chief of the Air Corps, who were in attendance. Prompt action was taken to investigate the whole matter, with the following result:

a. The Cleveland NEWS published the following editorial, which demonstrates that the original article did not represent the editorial and managerial opinion of the paper:

"OUR CHEERS FOR U.S. FLYERS

Of all the glories of the national air races, we think the watchers this year, as in other years, were probably most thrilled by the formation flying by the army, the navy and the marine corps. Without them, the races would not be the spectacular American show they have become. These flyers are in a sense all 'our own.' They are the guardians and the representatives of the greatest land in the world, as they dash, loop, slide, and roll in their marvelous unity formation by threes.

It is a grand thing for the races to bring forth the army's, navy's and marines' best each year, and it is a grand thing for the military services to put such elegant squadrons on exhibit before the American people through the air races. There is a patriotic dignity in the military performances which no civilian flyers and no foreign visitors can ever achieve.

And for the flyers in these exhibitions to come so close as they do to risking life and limb to demonstrate the dynamic grace of aviation, to dive at such slight heights, to roll and loop low enough for the crowd to see so well, speaks volumes for the men themselves. Their spirits must be indomitable and their loyalty to their services immense, or they could not be so well trained, so expert and so daring.

That the services appreciate the growing glories of the national air races was attested by the presence here of Maj. Gen. Oscar Westover, chief of the army air corps; Brig. Gen. H.H. Arnold, assistant chief; Maj. Gen. F.M. Andrews, chief of the GHQ air force; Brig. Gen. G.C. Brant, commanding the second wing of the GHQ air force; Rear Admiral A.B. Cook, chief of the bureau of naval aeronautics; Colonel Ross Rowell, chief of the marines' aviation force; Colonel Roy

Geiger, commanding officer of the marine air detachment at Quantico; Colonel A.H. Gilkeson, in charge of the Army flyers, and Lieut. Com. I.S. Coombs, in charge of the navy flyers; and Lieut. Col. J.M. Johnson, assistant secretary of commerce for aeronautics. These officers not only are to be praised for the excellence of their flyers, but are also to be assured that Cleveland loves and honors the show they put on under the sponsorship of the American flag."

b. The President of the National Air Races Association, Mr. Greve, wrote a letter to the Chief of the Air Corps which made it very clear that the expressions in the original article did not emanate from and did not represent the sentiments of the National Air Races authorities. It was a very fine apology for the whole incident.

I.C.E.

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WEST POINT CADETS VISIT LANGLEY FIELD

On August 20th, the 1938 Class of the U.S. Military Academy made their annual visit to the Second Bombardment Group at Langley Field, Va. Lieut. Colonel Robert Olds, Group Commander, gave the Cadets a short talk regarding the performance, mission and the future of the four-engine airplanes in the defense of the nation.

The Cadets displayed keen interest in the "Flying Fortress", inspecting the B-17's thoroughly and witnessing the loading of 100, 300 and 600-lb. demolition bombs. Later in the morning, the Group's guests from West Point, along with many other visitors, witnessed from the shores of Messick a precise bombing demonstration on a typical target, located on Plum Tree Island.

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RESERVE OFFICERS ORDERED TO RANDOLPH

The following-named second lieutenants of the Air Reserve have been placed on extended active duty at Randolph Field, Texas: Stuart H. Murphy, of Kenosha, Wis.; Roger Boyer Whittaker, Willoughby, Ohio; Elmer LeRoy Parsel, Plymouth, Ohio; John H. Bondurant, Hapeville, Ga.; Bernard M. Lloyd, Fort Wayne, Ind.; Cecil S. McFarland, Enid, Okla.; William S. Rust, Alameda, Calif.; Mem Crear Weit, Tallahassee, Fla.; Charles Elmo Hart, Cincinnati, Ohio, and Paul Flint Davis, Griffin, Ga., to September 9, 1940; Clayton Alfred Beran, San Diego, Calif., to October 4, 1940, and Joseph S. Wakefield, of San Diego, Calif., to September 10, 1940.

Second Lieut. Percival M. Baron, of Martinton, Ill., was placed on active duty at Fort Bragg, N.C., to September 6, 1940.

NEW SERVICE CLUB AT CHANUTE FIELD

Prospective enlisted students for the Air Corps Technical School and former enlisted men at Chanute Field will be very pleased to hear that a large commodious and well-equipped Service Club has just been completed.

Everyone has realized for a long time that such a club was sorely needed. As Mark Twain said about the weather, "Every One talks about it, no one does anything.

Lieut. Colonel Junius W. Jones, Air Corps, the Commanding Officer, was enthusiastic concerning the establishment of a place where men below the first five grades could congregate for entertainments and social occasions. Funds were secured for renovating a building on the post and for the purchase of the necessary furniture, equipment, and furnishings.

The Club is tastefully decorated in a color scheme of blue and gold. Chrome steel furniture, a piano, radio, rugs, table, curtains, and indirect lighting floor lamps all combine to form a "clubby" and attractive interior. The Club is well equipped with reading material, writing desks and stationery.

Plans have already been made for holding parties, dances, and dinners after the formal opening.

A feature of the Club will be the employment of a hostess to have charge of planning of social affairs, party nights and dinners.

In the near future the lawns surrounding the Club will be landscaped with floral gardens, shrubbery and other attractive plants. Chairs and tables will be placed out on the lawns to accommodate summer parties.

Needless to say, the enlisted personnel are most enthusiastic over the new Club. Nightly the "bucks" and "near-bucks" (seventh and sixth grades, respectively, according to the best accepted War Department nomenclature) rendezvous at the Club for the purpose of discussing the affairs of state, new lady friends, technical subjects, or to just simply "chew the rag."

A very unusual feature, and one which it is believed will be most enjoyable, provides for serving of late breakfast, nine to ten o'clock, on Sunday mornings. Following the breakfast, the Chaplain will hold an informal discussion hour.

To Chaplain Wallace I. Wolverton must go the greatest credit for his initiative, hard work and planning in order to make this well-appointed Club possible. Although a great deal of credit is due local civic organizations and to other personnel for their assistance and cooperation, the burden of "carrying on" has rested largely upon the shoulders of Chanute Field's energetic and capable Chaplain.

FLYING TRAINING OF WEST POINTERS AT MITCHEL FIELD

The following interesting account of the reaction of West Point Cadet Air indoctrination at Mitchel Field during the month of July, this year, was received from Cadet Edward F. Gillivan:

"This, gentlemen, is a wind tunnel; this, is an air foil. And this, gentlemen, is the picture of an airplane. Now when you get to Mitchel Field this summer, you will have a chance to see the theories of aerodynamics in actual practice."

Throughout the course in aerodynamics, which we studied last Spring, we had thought of Mitchel Field. And while we studied air foils and plotted lift and drag coefficients and wrestled losingly with Reynolds' Number, we consoled ourselves with the thought that when we once started flying the theory of flight didn't matter much.

For the past two years the "Mitchel Field Trip" has come to be one of the high lights of the First Class summer. For two years, members of the Class of 1938 had looked forward to flying, considering it, along with the Georgia trip, as compensation for not going on furlough. Last winter and spring, when construction was begun on an airport at Newburg, not far from West Point, rumors began to go round that this summer there would be no trip to Mitchel, and that the First Class would get its instruction at Newburg Airport. But when summer arrived and the schedule of training was published, the words "Mitchel Field," like "Abou ben Adhem," led all the rest, and the First Class breathed a sigh of satisfaction and relief.

For the purposes of summer training, we were divided into six drill groups. For the trip to Mitchel Field, these were consolidated into three groups of approximately one hundred cadets each. The first group left the Academy on June 12th, Graduation Day, and on the next two successive Saturdays the second and third sections, respectively, made the trip.

The trip was made by motor convoy, baggage also being carried by truck. Each cadet was allowed one laundry bag, and a trunk locker shared with another cadet to carry his belongings. In addition to this baggage, most of us had either tennis racquets or golf clubs. The convoy left the Academy early on Saturday morning. We crossed the Bear Mountain Bridge and proceeded on the East side of the Hudson to New Rochelle. Here the convoy was ferried across to Long Island, where a motorcycle escort was waiting for us. In the wake of our escort, we made good time out to Mitchel Field, arriving there about eleven o'clock to find the group which had come the week before waiting for us, full of enthusiasm over their stay and regretful over having to leave. The convoy which brought us took them back to Summer Camp, and left us to begin our acquaintance with the Air Corps.

We were quartered for the trip in one of the barracks. Each provisional company, with its cadet officers, occupied a squad room, and the entire group ate in the barracks' mess. Immediately upon our arrival we unpacked, gathered together our assorted belongings and put our squad rooms and lockers in order. Flying equipment for the trip was drawn, and we stood inspection wearing our coveralls, helmets and ear-phones.

After dinner, we assembled in the recreation room of the barracks to hear a talk on the proposed schedule of instruction, and the administrative details and regulations which would be in force during the trip. To our great satisfaction we found out that we would be allowed to do voluntary flying in addition to our scheduled hours. We learned the difference between local and cross-country flights and were considerably surprised at the limits which were laid down. "Limits" to a cadet is a pretty well defined term, and on trips it usually includes an area which can easily be covered during free hours. On the Field Artillery hike, which we had made a week previous, "limits" had been set as a radius of one mile from camp. And now the Air Corps was giving us about a 200-hundred mile circle in which we could fly,- Boston to the North, Washington to the South and Middletown to the West, We were to be allowed to take cross-country flights anywhere within the area bounded by these cities. The mobility of the Air Corps was made most evident.

Our first flights were scheduled for Monday morning. But all day Sunday the cadets haunted the line and the hangars hoping to get a ride. And from then on there was hardly any time between dinner and taps when there were not at least a dozen cadets standing around the Operations Building waiting for someone in flying clothes to appear.

Our ground instruction began on Sunday morning. At the Post Theatre we were welcomed to Mitchel Field by Colonel Walter H. Frank, the Commanding Officer. Following his talk, we were given instruction on the parachutes, safety precautions, etc., with special emphasis upon their adjustment and use.

Those of us who were in the second trip section were greatly disappointed on Monday morning. The weather which had been good while we were at West Point now played us double. Mist and rain "like the gentle dew from heaven" were all over the field. But, like the "quality of mercy," it was not strained. Rather, it resembled in consistency a rich grade of thick pea soup. Men who lived on Long Island gloomily predicted that the weather would last a week. But, with flying out of the question, we went ahead with ground school, completing both Monday's and Tuesday's work, to give us time to make up for lost flying hours when the weather lifted. In spite of the weather, a few cadets spent most of their time on the line, watching the red flag and looking for a lift in the sky.

Tuesday was clear and we began our flying. The course of instruction included both flying in various types of ships and ground instruction. In the regular schedule, the flying was done in the morning and the ground instruction was given in the afternoon.

The flying instruction consisted of a familiarization flight, a bombing mission, an observation flight and an hour with the PT-13's.

Our bombing mission was off Fishers Island. The flight took off early in the morning, and we dropped our bombs on a target towed by the Coast Guard. The cadets were in the rear of the ships, and we were able to observe the bombing through the machine gun trap. At least, we observed until we suddenly realized that we were hanging out over eight thousand feet of nothing, with our quick attachable parachutes hanging in their racks about six feet away.

Without a doubt, the greatest thrills came in the PT's. Here the Air Corps made and lost converts, and each man came down to be greeted with the ominous "Did you?" Some did and some didn't, but there were no flights which had not some aftermath of the bucket and sponge.

The ground instruction was less exciting but equally interesting. It included a tour of the field, with explanations of the work which was being carried on in the different departments. The cadets found of greatest interest the photographic section and the parachute packing building. Included also in the ground instruction were lectures on the theory and practice of bombing, navigation, photography and meteorology.

During their free time, the cadets took full advantage of the recreational and social opportunities which Mitchel Field and Long Island offered. The swimming pool and the tennis courts were seldom vacant, and every day some of the cadets could be found at the Cherry Valley Country Club or at other neighboring golf courses. During one afternoon and evening, a picnic was held at Jones Beach for cadets and their guests, and on another evening there was dancing and supper at the Officers' Club.

Such was the Mitchel Field trip of 1937. Those of us who have piping Air Corps and Randolph came back to West Point more enthusiastic than ever. Those of us who still think in terms of batteries or platoons certainly had no regrets over the trip. We had gained a lot, had new experiences and a really good time. And we most certainly had not lost anything - except maybe a breakfast or so..

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BUSY BOMBERS AT NICHOLS FIELD

A new training year is well under way in the Philippines. Drawing fresh personnel from the July transport, the 28th Bombardment Squadron settled down after "Boat Week" and put "shoulder to the wheel."

Two classes every morning, with flying wedged in between rainy season's showers leaves little time "a-waste-ing.'

"'Skippy' Harbold," says the News Letter Correspondent, "gives us Navigation every morning from 7:30 to 8:30, and 'Paddy' Ryan teaches Bomb Sights from 11:00 to 11:30 a.m. Five B-10B's with combat crews to train gives us something to work for. Things look businesslike as we square away for aerial gunnery within the fortnight. The present set-up includes seven officers assigned, all First Lieutenants - E.H. (Wump) Porter, commanding; N.B. Harbold, Adjutant; T.S. (Tommy) Power, Engineering Officer; H. Harris, Mess Officer; and new arrivals - J.A. Miller (on May transport), Armament and Supply Officer; D.N. Motherwell, Operations Officer; W.W. Bowman, Communications Officer. The attached pilots include Lieut. Colonel Ralph Royce, new Department Air Officer; Lieut. Colonel Thomas S. Voss, Group and Post Commander, and 1st Lieuts. F.A. Pillet, J.P. Ryan and H.L. Mace. Major D.S. Seaton is attached as our only observer."

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MAXWELL FIELD OFFICERS AT AIR RACES

Captain Pratt and Lieut. Aring, Air Corps, of Maxwell Field, Ala., were in attendance at the Air Races at Cleveland, Ohio, from August 31st. Captain Pratt, the Technical Photographic Officer at Maxwell Field, was on duty at the Air Races in connection with photographic work. Lieut. Aring is a member of the "Sky Larks" from Maxwell Field. This team staged daily demonstrations in acrobatics at the Air Races.

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The 21st Reconnaissance Squadron of Langley Field, Va., participated in the West Coast Exercise during August by performing frequent reconnaissance and surveillance missions with the YOA-5 from a base at Hamilton Field. The "Duck," now known in the Squadron as the "Queen Mary," was piloted by Major Hugh C. Downey, Squadron Commander, and Captain James M. Fitzmaurice.

WHAT THE FUTURE HOLDS IN STORE FOR THE FLYING CADET

LIEUT. Beirne Lay, Jr., Air Reserve, a graduate of the Air Corps Training Center, Class of July, 1933, and now on extended active duty at Langley Field, Va., gives a straight to the shoulder talk to the students of the Air Corps Training Center in an editorial in the August issue of THE TEE, published by the Flying Cadet Battalion of Randolph Field.

Lieut. Lay is the author of the book "I wanted Wings," in which, using the language of flying and flying men, he has drawn word pictures of his sensations and impressions during his flying career exactly as he felt them. Lieut. Lay states:

"If I remember rightly, the thought uppermost in a Flying Cadet's mind aside from 'can I get through the course?' is 'suppose I do get out of Kelly with embroidery over the left pocket. What have I got? Is there any future in a few years of active duty with a tactical unit followed by a Steve Brodie into the cold outside world? Have I made a ring-tailed monkey of myself by tossing away some of my best years learning to be a birdy and go by-by in the clouds when I might have spent the time moving in on the ground floor of the job at which I'll spend the rest of my life? What are my chances of a regular commission? Do I want one if I can get it -- is the Army Air Corps a good life? Have I joined the tail end of a bread line with a fatal crack-up at the other end, sooner or later?'

Those are a lot of questions. Nobody can answer them for everybody. But as an alumnus with a bit of active duty under his belt and some swell living in a cockpit behind him, I'll fire a couple of short bursts at the target. In the first place, anyone who goes down to Randolph and gets through Kelly is mildly insane. For that reason, if for no other, he will enjoy life more than the other fellow from there on out, come what will. Five years' active duty will give him money in the bank and more than the minimum hours necessary for an airline co-pilot's ticket. The boys I know who have gone with lines tell me it's a damn good life, too. They like it. They have a future. And they haven't been wasting any time on the way, either, for many of the lines no longer take on any but Army trained pilots. If you're going to be a bombardment pilot, you may get invaluable experience with four-engine equipment. Reserve officers are logging time as co-pilots on the B-17's right now.

Regular commissions? I've been hearing about them for four years. So far there has been no wholesale handout of them. But 310 Douglas B-18's are being delivered to the Service and an effort made in other categories to bring airplane strength up to the authorized strength of 2320. Somebody's got to fly them. It looks like regular commissions to me before your five years are up.

And the Air Corps life? Like any other life, you can make of it what you will. However, there are a few side dishes to the main Blue Plate of an ordinary job: leisure; personal mobility - trips to all parts of the U.S. at no expense; variety and, occasionally, excitement; relative absence of back-knifing and of 'keeping up with the Jones's'; a full month's vacation a year; and last but not least, fresh air, the outdoors, the sun shining on you instead of a dome light above an office desk.

And the chances of getting bumped off? They kill more of them in bathtubs than they do in Army airplanes. If you're a fatalist, and you will be if you've ever had a crash, and walked away from it, you won't worry about the 'hazards' of military flying. You'll know that somebody else is calling the plays, whether you're an interior decorator or a steeplejack.

There are some of my classmates who wouldn't agree with much of what I've said. They'd say: 'I like the airlines better.' Or: 'the Army's a waste of time. Where does it get you?' Or: 'I'd rather have a job on the outside any day.' But if you pinned them down, they'd admit that the government doesn't owe them a thing. That they don't, and never will, regret a single day they spent in Texas in a Flying Cadet uniform or on active duty. That it's given them something. That they've GOT something."

Battalion Commander Hal B. Armstrong, of the May, 1937, Class at the Air Corps Primary Flying School, Randolph Field, Texas, expressed the following greeting to the members of the July, 1937, Class through the columns of THE TEE in the issue referred to in the preceding article:

"It is with a feeling of pride that we of the upper class of March, 1937, welcome the class of July, 1937. Although we have been Flying Cadets for only five short months, we have already realized the marvelous opportunity that awaits you. You, and you alone, are the ones to take advantage of it - we of the upper class are behind you to a man.

Many of you have left your homes and loved ones for a life that is entirely strange to you. You are embarking on a career that has been your life-long ambition. Adapt yourselves as quickly as

(Continued on Page 9.)

ARMY'S MULTI-SEATER FIGHTER MAKES FIRST FLIGHT AT BUFFALO

The War Department announced on September 1st that the new multi-seater fighter, technically known as the XFM-1, built by the Bell Aircraft Company at Buffalo, made its initial trial flight at the Municipal airport at Buffalo on that date. The flight was entirely successful.

No plane of recent times has created more speculation or has been watched with greater interest by observers than this new fighter since the War Department first on July 19th announced that it had been completed and delivered to the airport for tuning up prior to initial flight tests.

Lieut. Benjamin S. Kelsey, Air Corps, flew the plane on its first flight. He was assigned by the Army Air Corps' Experimental Division at Wright Field to make the performance flights. Lieut. Kelsey flew the new high-powered, twin-engined, low wing plane for more than an hour in the vicinity of the field at Buffalo, putting it through its paces; at first easily and gingerly and finally trying out all the controls at various speeds. Upon landing he expressed satisfaction at its performance, ease of control and general flight characteristics.

Questioned by the designers and builders and by interested Air Corps observers who had followed closely every maneuver of the plane while aloft, Lieut. Kelsey said:

"I have been standing by for several weeks, watching the plane checked and tested on the ground; I was anxious to get it in the air, for, as you know, after all, airplanes have to do their stuff in the air to justify their existence. I was anxious to get my hands on this one to see if it was as good as it looked. It was too early to say how it will work out through all its tests, that will take time - complete performance data obviously have not yet been collected. These tests will be continued at Wright Field where I have orders to deliver the plane soon. However, I am very well pleased with what this ship showed today and I am delighted that I have been given the opportunity to run the flight tests on it."

The XFM-1 is designed with the idea that there is great need for a fighter capable of coping with the giant Bombers of the so-called "Flying Fortress" type. It is expected that this plane will have sufficient speed to overhaul these large fast Bombers and the gun power to cope with them successfully when engaged.

The multi-seater fighter will soon go to Wright Field, Dayton, Ohio, for final flight tests, after which it is expected that it will be sent to the GHQ Air Force, Langley Field, Va., where it will be flown in competition with other craft and a new set of tactics worked out for its employment.

The plane contains some radical departures from conventional military design. To begin with, it is a pusher - its propellers are behind the wings. This is a revolutionary change in modern airplane construction. Engineers believe that this will give increased propeller efficiency. This arrangement permits the wing gunners, one on either wing, to have a free field of fire and observation to the front, uninterrupted by engine or propeller. This change in design also frees the gunners from having to work in the propeller blast, a handicap to gun maneuver and accuracy.

It is believed that this plane will develop sufficient speed to overhaul any air targets. This plane has six guns, more powerful armament than ever before carried on a fighter. It also carries light bombs. It accommodates a crew of five, pilot, co-pilot-navigator, radio operator-gunner, and two outboard wing gunners. It is powered by two engines recently developed by the Allison Engineering Corporation in conjunction with Air Corps engineers. All gasoline is carried in compartments in its giant wings. This materially reduces the fire hazard.

The new monoplane embodies all the latest design devices to increase its speed and air-worthiness. Its landing gear and tail wheel are electrically retractible. It carries flaps to reduce its landing speed. It provides heated compartments for all members of its crew, which will be needed at its fighting ceiling, over thirty thousand feet.

It contains some new and radical departures which may have far-reaching significance for the civil air industry as well as the military. Among these are its power plant location and its pusher propellers, and the auxiliary power plant for retracting landing gear, for lights, radio and starters. The auxiliary plant drives nine electric motors, taking this load off the two engines which drive the propellers. This new fighter can continue to transmit radio messages after forced landing when its main power plants are dead.

An innovation in this plane is the interchangeability of any or all members of the crew. The wing gunners can travel between their stations and the main fuselage while in flight; the co-pilot can change places with the pilot, the radio operator can man the guns; all stations have inter-communication. The advantageous location of the wing gunners in front of the engines permits them to see the pilot, making visual signals practicable between all members of the crew. Complete telephone inter-communication is also provided.

"NERVOUS SHOE LACES" AND "JITTERY HANDS"

The above heading would seem to be an appropriate one for the article on the Automatic Landing System, the authors of which are Captains Carl J. Crane and George V. Holloman, Air Corps. They say, referring to the series of tests conducted through the last two years in connection with the automatic landing system, that this line of endeavor brought up many humorous incidents, not the least of which have been such terms as "nervous shoe laces" and "jittery hands" which have always been evident to the observer watching the pilot keep "hands off" during the automatic landings.

The article by Captains Crane and Holloman is quoted, as follows:

"Much has been written in recent months concerning the personal equation during flight and the influence of this equation on accident rates. The newer developments in modern aircraft, to insure high performance, have required an increasing number of cockpit devices, all of which demand the attention of the pilot at some time or other during any given flight.

Pilots have felt and expressed the need for simplification of the various controls that must be manipulated and have expressed the need for this simplification in no uncertain terms. This simplification means that many of the functions now performed by the pilot in flight control and navigation must be done automatically. The landing of aircraft is no exception to this general trend. With this in mind, the personnel of the Materiel Division over two years ago began active prosecution of development work to simplify the procedure of instrument landing by making it automatic.

For over a year Air Corps test airplanes have been flown automatically over distances that have indicated the thorough reliability of the devices employed. This was one step in the perfection of automatic landing. The features therefore that are built into the automatic landing system are not only useful for the landing but are used throughout the entire flight of the airplane across the radio navigational aids with which the United States is provided. Test airplanes from Wright Field have been flown automatically from Wright Field as far as Texas and return under automatic control. Several flights have also been made from Wright Field via Buffalo, New York, to Newark, New Jersey, and from there via Langley Field, Va., to Wright Field, Dayton, Ohio. Obviously the automatic landing involves other factors besides control of direction. These factors are control of altitude, engine control, glide control and further engine control after landing.

With the provision of the Air Corps automatic landing system in an airplane and with the installation of the new "Z" type radio range beacons, the airplane may be flown automatically from station to station, from East to West Coast. If we imagine a group of the future "Z" type radio ranges placed in a line joining the runway of the landing field and extending to a point five miles therefrom, some idea will be gained of the essential features of the Air Corps automatic landing system. By reference to Figure 1 which represents the path of flight and landing made by the Army C-14 Cargo airplane on Monday, August 23, 1937, a generally clear idea will be obtained of the path of the airplane in the horizontal plane. Figure 2 represents a vertical view of the airplane flight path and landing path which the Army airplane followed in executing what is believed to be the world's first entirely automatic airplane landing. The two diagrams above mentioned should be self-explanatory and in themselves are evidence of the continuation of development on the Air Corps system of instrument landing.

On Monday, August 23, 1937, after over two years of intensive research and design with respect to automatic control features and automatic flight procedure, two entirely automatic landings were made in the period of an hour under adverse air and wind conditions by Captain Carl J. Crane, Director of the Instrument and Navigation Laboratory; Captain George V. Holloman, Assistant Director of the Laboratory, and Mr. Raymond K. Stout, project engineer in automatic landing. Since that time additional landings have been made in which disinterested personnel have been carried as observers on the flights in order to check the various factors entering into the fully automatic landings performed.

In the execution of an automatic landing, using the Air Corps system, it is necessary for the pilot of the airplane to bring the airplane to a definite altitude, determined by the sensitive altimeter, and to place the airplane within the range of radio reception of the ground radio facilities. It is, of course, desirable to place the airplane generally in the direction in which it is expected to land, but this is not necessary as was determined in flight, and can be understood by reference to Figure 1, in which the airplane was actually placed in a position which headed it 180° away from the direction of final landing. When the pilot has placed the airplane at a selected altitude in the vicinity (20 miles or less) of the landing field, the master landing switch is closed and the airplane proceeds through the following routine in accomplishing

AIR CORPS
AUTOMATIC LANDING SYSTEM

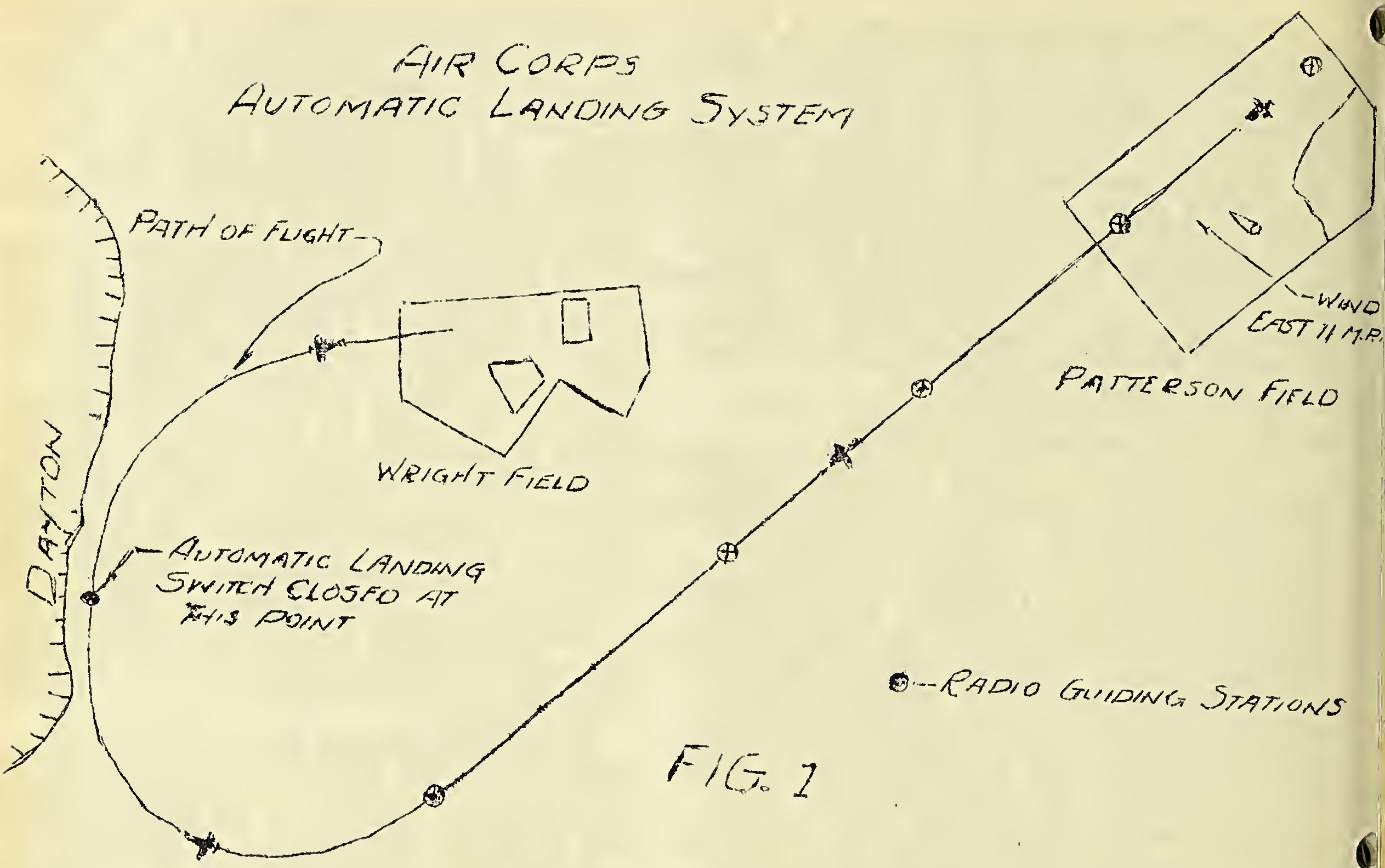

FIG. 1

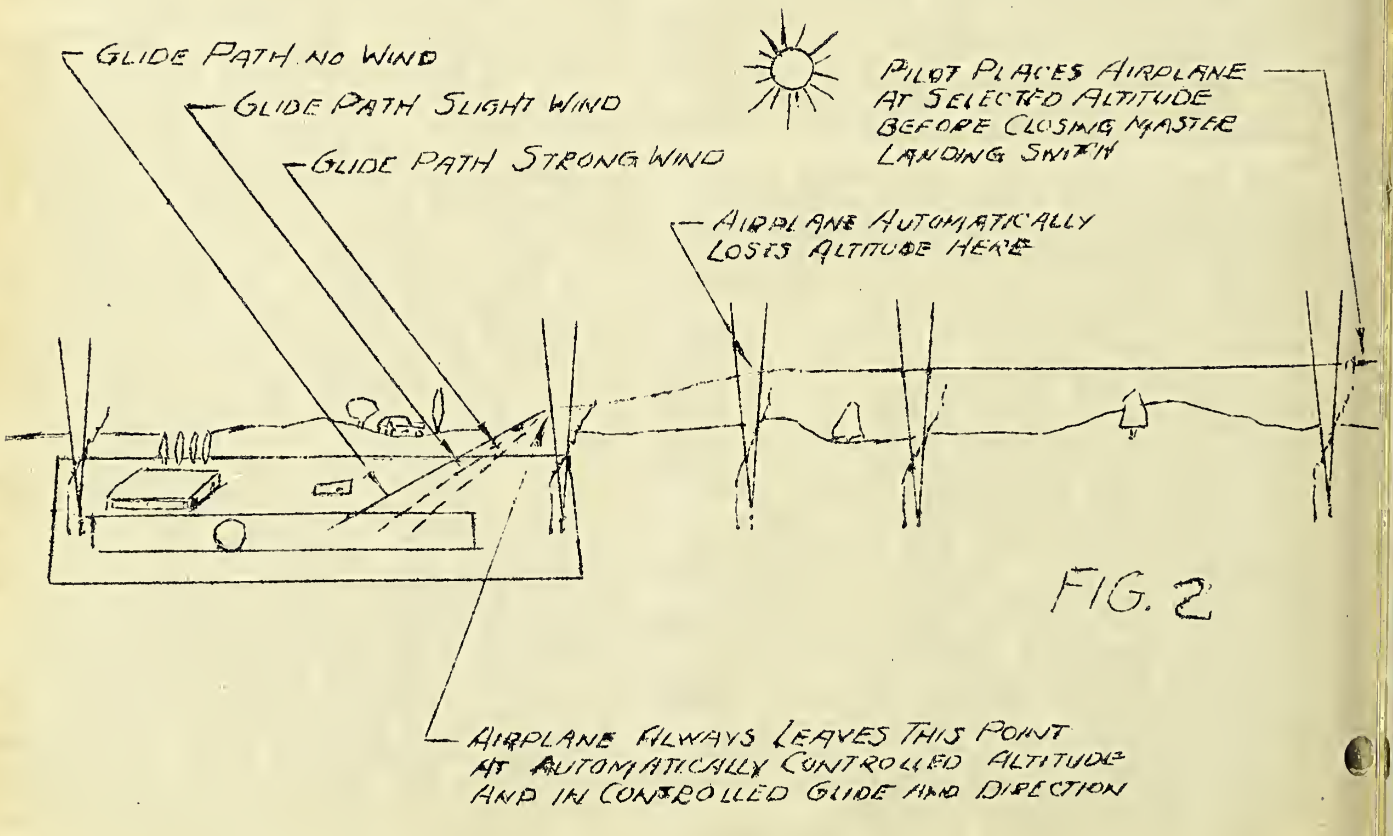
GLIDE PATH NO WIND
GLIDE PATH SLIGHT WIND
GLIDE PATH STRONG WIND
PILOT PLACES AIRPLANE AT SELECTED ALTITUDE BEFORE CLOSING MASTER LANDING SWITCH
AIRPLANE AUTOMATICALLY LOSES ALTITUDE HERE
AIRPLANE ALWAYS LEAVES THIS POINT AT AUTOMATICALLY CONTROLLED ALTITUDE AND IN CONTROLLED GLIDE AND DIRECTION

FIG. 2

the automatic landing:

a. The selected altitude is automatically maintained and the airplane's heading is changed so that it flies in the direction of the radio guiding station most remotely located from the landing runway.

b. The altitude control device maintains the proper altitude during the initial approach as just noted. The directional relay interlocks the radio compass and the gyro pilot and therefore causes the change in heading of the airplane. Adjacent to this relay is the radio compass, the frequency of which is automatically set by the interaction of the marker beacon receptor working in conjunction with the frequency selector. The pilot of the airplane is informed as to the correctness of automatic settings by observing the frequency selector indicator. Through the automatic and cooperative action of these devices, the airplane heads to the compass guiding station farthest from the field as shown in the diagram. Upon reaching that station the frequency is automatically changed to Station No. 3, where it is again automatically changed to the frequency of Station No. 2, where the frequency is again automatically changed to that of Station No. 1, while at the same time the engine throttle is automatically operated by the throttle engine. The throttle engine is interconnected with the altitude control in such a manner that should the airplane reach its minimum altitude prior to reaching radio station No. 1, the throttle engine will be so actuated to control the airplane in such a manner that it will maintain accurately the minimum altitude required for the operation of the automatic landing system.

After passing Station No. 1, the throttle engine is so actuated that the airplane maintains a selected glide angle and rate of descent until ground contact is made. When ground contact is made, the throttle engine is further actuated by the landing gear switches, which in turn causes the engine to be idled and proper brake application made.

At the present writing, the automatic landing system has been flown so that all of the landings made to date have been made under cross wind conditions varying in intensity as high as eleven miles per hour. In at least 50% of the automatic landings made, the air conditions have been moderately rough.

The Sperry Gyro Pilot has been used throughout as the automatic flight control features of the airplane. Certain additions to the Sperry Pilot have been required in order to provide for the automatic control of direction.

The automatic landing system was designed by Captain Carl J. Crane, Director of the Instrument and Navigation Laboratory at Wright Field, and working with Captain George V. Holloman had conducted practically all of the flight tests which have brought to a successful conclusion the automatic landing system. The various units of automatic control were designed by the above noted officers, Mr. Raymond K. Stout, project engineer, and Mr. C.D. Barbulesco of the Signal Corps Aircraft Radio Laboratory, which laboratory assisted materially in the design and construction of various units entering into the automatic landing system.

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Flying Cadet's Future

(Continued from Page5)

possible to the ways of the Service and analyze yourself with a desire to disclose those characteristics which a successful officer in the Air Corps must have and then do your utmost to develop them. For instance, have you obedience, initiative and perseverance?

Your course is hard, not only in flying, but also in ground school. There will be occasions when you will feel like 'throwing in the sponge', and admitting defeat. However, if you do weaken or refuse to give the best you have, it is better that you be eliminated - a man who does his duty half way is worse than none at all. Unfortunately, flying is an art in which all of us cannot become proficient. It is no disgrace to washout on the flying line if you can say truthfully that you have given your best. You are the ones we are sorry to lose. * * * "

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CONSTRUCTION AT MARCH FIELD

Under the supervision of the Constructing Quartermaster, extension and resurfacing of the south side of the landing mat is under way at March Field, Riverside, Calif.

When completed, the project will afford a 4,000-foot runway, 150 feet wide, for the heavier type airplanes. It will extend 200 feet past the east end of the 3550-foot mat, and 250 feet past the west end.

This new runway will greatly facilitate the increasing traffic into March Field of the newer type bombing planes.

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All of the senior officers of the 2nd Bombardment Group, Langley Field, Va., recently received from the War Department the rating of Military Airplane Pilot. "The officers and men of this Group," says the News Letter Correspondent, "wish them many more successful years and hours in the Air Corps and trust that their aviation future will not be as hazardous as the past."

BIOGRAPHIES

LIEUT. COLONEL CHARLES T. PHILLIPS

Lieut. Colonel Charles T. Phillips, Air Corps, now on duty in Washington, D.C., as a member of the War Department General Staff, was born at Tullahoma, Tenn., July 10, 1889. He attended preparatory school in Tennessee; the Gordon Institute at Barnesville, Ga., for one year, and, after completing his sophomore year at the University of Georgia, Athens, Ga., he was engaged in civil engineering work for one year and then entered the newspaper field as reporter, special correspondent and special writer for the Atlanta JOURNAL.

Enlisting as a private in the 5th Georgia Infantry in March, 1916, Colonel Phillips, on April 19th of that year, was appointed a 1st Lieutenant. On June 20, 1916, when his regiment was mobilized and mustered into the Federal service, he was sent to the mobilization camp at Macon, Ga., in command of a company. He served in this capacity until a few weeks after the arrival of this regiment at El Paso, Texas, for Mexican Border patrol duty, when he was attached for duty and instruction to the 34th U.S. Infantry.

Following attendance at garrison school and commanding a company of that regiment for several months, he was attached to the 122nd Infantry, and for a brief period served as company commander with that organization.

In July, 1917, Colonel Phillips was ordered to Wilbur Wright Field, Fairfield, Ohio, for flying training. During the course of this training, he served as assistant to the commanding officer of cadet squadrons, and later as field supply officer, as commanding officer of the 44th Aero Squadron and as commanding officer of the 211th Aero Squadron. On December 29, 1917, he reported at Gerstner Field, Lake Charles, La., for advanced training in Pursuit aviation. In addition to his duties as a student, he served as assistant to the officer in charge of flying and as instructor of cadets in Guard Duty, Army Regulations and officers' duties.

Upon his graduation from the Pursuit School at Gerstner Field, he reported on May 8, 1918, at the School of Aerial Gunnery, Selfridge Field, Mich., where he was on duty as assistant to the officer in charge of flying and as assistant to the chief instructor at the school. On October 10, 1918, he was ordered to the Aviation Concentration Depot at Garden City, L.I., New York, for transportation overseas, but the Armistice was signed while he was awaiting transportation.

Assigned to the 1st Provisional Wing at Mineola, L.I., New York, Colonel Phillips served for a brief period with the 48th Aero Squadron and then with the 51st Aero Squadron. He commanded the latter organization from December 6, 1918, to January 10, 1919, and for a short time was personnel adjutant. During April and May, 1918, he was on duty with the Eastern Flight of the Victory Loan Circus. On May 24, 1919, he was assigned as Commanding Officer of the 3rd Aero Squadron at Hazelhurst Field, L.I., New York, and on June 28th entrained with this organization for the Philippine Islands.

Colonel Phillips was stationed at Cuartel de Espana, Manila, from August 15 to December 2, 1919, and at Clark Field, Pampanga, until August 10, 1921. In addition to his duties as commanding officer, he also served as Adjutant and Personnel Adjutant of the field and later as commanding officer thereof until the expiration of his tour of duty in the Philippines.

Upon his return to the United States, he was, in September, 1921, assigned as student at the Field Officers School at Langley Field, Va., and he graduated therefrom on June 15th of the following year. He was then assigned as Instructor, Air Service, Maryland National Guard, with station at Logan Field near Baltimore, Md. While on this assignment, he was on temporary duty in the Militia Bureau, Washington, D.C., from June 4 to December 7, 1923, and from November 5, 1925, to January 2, 1926. From December 7, 1923, [illegible] he performed additional duty as Air Officer of the 3rd Corps Area, Baltimore, Md.; as assistant to the Chief of Staff, G-1, and as assistant to the Recruiting Officer, 3rd Corps Area.

Assigned to the Office of the Chief of the Militia Bureau, January 2, 1926, Colonel Phillips was on duty therein until September 15, 1929, when he was assigned as a student to take the advanced course of instruction at the Infantry School at Fort Benning, Ga. Following his graduation from this school, on June 10, 1930, he was assigned to station at Maxwell Field, Ala., where for brief periods he served as Commanding Officer and as Executive Officer until August 22, 1930, when he reported for duty as a student at the Command and General Staff School at Fort Leavenworth, Kansas. Graduating from the two-year course at this school, he attended the Army War College, Washington, D.C., for one year, and upon his graduation therefrom on June 27, 1933, and following the completion of a five weeks' course at the Chemical Warfare School at Edgewood Arsenal, Md., he was assigned to station at March Field, Riverside, Calif., where from September 23, 1933, to November 2, 1933, he commanded the 9th Bombardment Squadron, and thereafter served as Executive Officer of the 7th Bombardment Group until November, 1934, when he was transferred to the Panama Canal Department.

During his two-year tour of duty in Panama, Colonel Phillips served, first, as Executive Officer of the 19th Composite Wing and later, in the order given, as Operations Officer of the 18th Pursuit Group, Albrook Field; Adjutant; Acting Air Officer of the Panama Canal Department, and Commanding Officer of Albrook Field and the 18th Pursuit Group. In September, 1936, he entered upon his duties as a member of the War Department General Staff.

Colonel Phillips was commissioned a 1st Lieut., Signal Corps (temporary) August 5, 1917, and promoted to Captain, August 29, 1918. He was commissioned a Captain in the Air Service, Regular Army, July 1, 1920, and promoted to Major, Air Corps, July 1, 1931, and to Lieut. Colonel (temp.) March 4, 1935. He holds the flying ratings of "Airplane Pilot" and "Airplane Observer."

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LIEUT. COLONEL HUBERT V. HOPKINS

Lieut. Colonel Hubert V. Hopkins, Air Corps, now on duty as Chief of the Industrial War Plans Section, Materiel Division, Wright Field, Dayton, Ohio, was born at Colorado Springs, Colo., July 10, 1889. He graduated from the Colorado Springs High School in 1908 and from the University of Washington State in 1916, receiving the degree of Bachelor of Science in Chemical Engineering. During the summer of 1914, he attended the War Department Military Training Camp for college students at Monterey, Calif. While a student at the Washington University, he enlisted in the 2nd Infantry Regiment, Washington National Guard, and after less than two years' service was commissioned a second lieutenant in that organization on November 26, 1916. He served for four months as Acting Regimental Adjutant, eight months as aide de camp to the Adjutant General, State of Washington, and four months on recruiting duty. He was promoted to 1st Lieut. of Infantry, Washington National Guard, March 9, 1917, and assigned to duty as Battalion Adjutant. On August 5, 1917, he accepted a commission as 1st Lieut., U.S. Army, and was assigned to the 161st Infantry at Camp Mills, L.I., New York.

On November 19, 1917, Colonel Hopkins accepted a commission as 1st Lieutenant, Signal Corps (temp.) and was assigned to the Headquarters of the Spruce Production Corporation at the aviation cantonment at Vancouver Barracks, Wash., and attached to Headquarters, casual detachment. He was on duty with the 411th Aero Construction Squadron from January 1 to 24, 1918; with the 602nd Aero Supply Squadron to March 1, 1918, and with the 604th Aero Supply Squadron to May 1, 1918. During all this time he also served as Adjutant of the casual detachment and as Exchange Officer. On June 12, 1918, he was assigned as Commanding Officer of the 13th Company, casual detachment, and he continued as such until August 2, 1918, when he was assigned as Assistant to the District Supervisor, Willapa Bay District, Spruce Production Corporation, with station at Raymond, Wash. He performed this duty until February 11, 1919, when he was transferred to Washington, D.C., and assigned to duty in the Personnel Department of the Bureau of Aircraft Production, the functions of which department were subsequently transferred to the Personnel Division, Office of the Chief of Air Service. He also served as Supply and Property Officer of the Personnel Division and as recorder of various boards of officers.

Relieved from duty in the Office of the Chief of Air Service, March 10, 1921, Colonel Hopkins was assigned to the Army Balloon School at Ross Field, Arcadia, Calif., as student to pursue the course of instruction thereat, and which course he completed on October 29, 1921. Thereafter he continued on duty at the Balloon School as Engineering Officer and as Instructor in Topography, Map Reading, Aerial Photography and Aeronautical Instruments. On May 1, 1922, he began the course in airship piloting.

Transferred to Scott Field, Belleville, Ill., he served as Instructor at the Balloon and Airship School at that field from August 20 to September 23, 1922, when he was transferred to Langley Field, Va., for duty as student at the Field Officers School, which designation was subsequently changed to the Air Service Tactical School. Graduating from this school on June 15, 1923, he was transferred to Kelly Field, Texas, for duty and training with the 10th School Group, taking the Observation course at the Advanced Flying School. On November 11, 1923, he was assigned as Commanding Officer of the 42nd School Squadron, and he performed this duty until January 2, 1924, when he was assigned as Instructor at the Advanced Flying School.

In February, 1924, Colonel Hopkins was transferred to the Hawaiian Department. He was assigned to the 4th Observation Squadron at Wheeler Field, Schofield Barracks, on April 14th, and was on duty as Commanding Officer of Flight "B" and as Transportation Officer. He assumed command of the Squadron in November, 1924. On January 9, 1925, he was assigned as Assistant Air Officer of the Hawaiian Department, serving as such until November 26, 1927. He served as Acting Air Officer until May 25, 1928.

Upon his return to the mainland, he was assigned to the Materiel Division at Wright Field, Dayton, Ohio, for duty in

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WHY THE WEATHER?

A Canadian newspaper recently published the following under the above heading: "Wind at will! In these days of yacht racing wind is very important. It is also important to the Caribs who practice the art not only of making the wind blow but of stopping it also. They whistle and wave their hands at a rain cloud to drive it away or in another direction. To quiet a storm, they chew the cassava root and spit it into the air and sea to pacify the spirit Zemeen, who may be hungry. To divert an unfavorable wind they strike the stern of their canoes with an arrow. The custom of whistling to raise a wind is very widespread. These childish beliefs and practices, if illogical, are interesting."

A constant reader of the Air Corps News Letter who read this item was greatly impressed with it and, being of Scotch descent and a firm believer in economy, with particular reference to the taxpayer, he saw at once great possibilities for effecting reductions in appropriations for the military establishment. The deeper his mind wandered into the subject the greater these possibilities presented themselves.

Since the subject matter of the above newspaper clipping had reference to the weather, it was natural for the N. L. Reader first of all to recall to mind the recently created Weather Service of the Army Air Corps. Now, the scheme he unfolds to effect savings in appropriations for the Army Air Corps is as follows:

First, to abolish completely the new and expensive weather set-up; next, have the Materiel Division take the place of those dealers in black magic (Weather Bureau). To the normal functions of the Materiel Division should be added a new and very important task, namely, to take care of the procurement and distribution of the Cassava Root. The Materiel Division is to equip each airplane with a ration to each member of the combat crew, issues to be made according to the size of the ship and the crew; then all hands, by the GHQ efficiency count, can chew, spit and pacify the weather.

With this accomplished, there would be no necessity in supporting a Weather Bureau. De-icers would be legislated out of existence and, above all, airplanes could come and go at all hours, regardless of Mother Nature.

Haven gotten thus far, our reader grows even more enthusiastic, and he goes on to say that the adoption of his scheme will remove a lot of flying risk, prevent many crack-ups, and tend to make airplanes last indefinitely.

He cautions the N.L. Editor not to tell Rube Goldberg about the scheme, as he first wants to obtain a patent on it.

SEARCH FOR FLYING CADET GUY W. EDGERTON

By the Kelly Field Correspondent

The mysterious disappearance of Flying Cadet Guy W. Edgerton, while returning from a cross-country training flight from Kelly Field to Barksdale Field has not yet been solved. Thirteen student flyers from the Attack Section of the Air Corps Advanced Flying School set out on a navigation flight to Barksdale Field on August 30th, under the leadership of 2nd Lieut. Edward F. Cullerton, Air Reserve. They arrived in due time, and at dusk set out for the return trip.

Shortly after they left Barksdale Fiel they encountered a severe thunderstorm, covering a wide area and blocking their path. Twelve students landed safely; five returning to Barksdale Field, two t Waco, one to Houston, two to Austin and two to Kelly Field. The thirteenth man, Flying Cadet Edgerton, has not yet been found.

Scheduled training was immediately discontinued and all available pilots of Kelly Field were sent on an intensive search of areas in which he probably was forced down. Randolph Field officers were also pressed into service as searching parties, as well as all available pilots at Barksdale Field. After four days of searching, with more than a hundred airplanes, the hunt was ordered discontinued by Brigadier General James E. Chaney, Commanding General of the Air Corps Training Center.

Rumors and speculations were rife as t what might have happened and what probably did happen. About a hundred telegrams were received at Kelly Field and Randolph Field from persons on the groun all the way from Houston, Texas, to Hugo Oklahoma, reporting that some unusual phenomena had been observed, which might have been the lost flyer. Each rumor thus reported was exhaustively investigated, but to no avail. In addition to this, the densely wooded area along the Neches and Trinity rivers between Barksdale Field and Kelly Field was divided into three sectors, Barksdale Field cove ing the northeast sector, Randolph Field the northwest sector and Kelly Field the south sector. Each sector was further subdivided into a small area, and each pilot was instructed to search this area thoroughly. The pilots conducting the search each flew approximately 8 hours for each of the four days on the search. No clues whatsoever were found to the disappearance.

It is the opinion of Captain Glen C. Jamison, Senior Instructor of the Attack Section in which Flying Cadet Edgerton was a student, that the missing flyer encountered the severe storm and rough weather at about the time his auxiliary tank was exhausted, and in fighting for control of his airplane he became confus-

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the Experimental Engineering Section. On July 1, 1928, he began his duties as student at the Air Corps Engineering School at Wright Field and, following his graduation therefrom in June, 1929, he resumed his former duties in the Experimental Engineering Section.

In September, 1929, Colonel Hopkins reported for duty as student to pursue the course of instruction in Aeronautical Engineering at the Massachusetts Institute of Technology, Cambridge, Mass. Upon his graduation from the one-year course at this school, he reported on August 2, 1930, to the Office of the Chief of the Air Corps, Washington, D.C., for duty in the Plans Division. From July 6 to 31, 1931, he took the Field Officers' course of instruction at the Chemical Warfare School at Edgewood Arsenal, Md.

Detailed as a student at the Command and General Staff School, Fort Leavenworth, Kansas, Colonel Hopkins, upon the completion of the two-year course of instruction thereat, was assigned as a student at the Army Industrial College, Washington, D.C., from which he graduated in June, 1935, following which he was again assigned to duty at Wright Field, Dayton, Ohio. On September 9, 1936, he assumed his present duties as Chief of the Industrial War Plans Section of the Materiel Division.

Colonel Hopkins was commissioned in the Regular Army as a 1st Lieutenant of Infantry on July 1, 1920. He was transferred to the Air Service on October 11th of that year; promoted to Captain as of July 1, 1920; to Major, July 18, 1931, and to Lieut. Colonel (temp.) June 16, 1936. He holds the ratings of "Airship Pilot," "Balloon Observer" and "Airplane Observer."

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Search for Flying Cadet Guy W. Edgerton

(Continued from Page 12).

ed when confronted with the necessity of changing tanks and dived or spun into ground, being unable to recover.

If he struck the ground in the densely wooded or swampy areas along the rivers mentioned, it would be impossible to see the wreck from the air, and the location would be all but inaccessible by land. It is also possible that he was forced out over the Gulf of Mexico.

Officials of the Air Corps Training Center have the meager comfort of knowing that no stone was left unturned to find this Cadet. The Air Corps has lost a promising student pilot.

Cadet Edgerton, a native of Kenly, N.C., was born on January 23, 1916, and graduated from the Presbyterian Junior College, Maxton, N.C. Prior to his appointment as a Flying Cadet to enter the October, 1936, class at the Primary Flying School at Randolph Field, Texas, he was a salesman with an automobile concern in Washington, D.C. He graduated from the Primary Flying School on June 25, 1937; was transferred to the Advanced Flying School, Kelly Field, and was to have graduated in October, 1937, and commissioned a second lieutenant in the Air Reserve.

The missing Flying Cadet is survived by his parents, Mr. and Mrs. W.H. Edgerton, of Kenly, N.C., to whom the sincere sympathy of the Air Corps is extended.

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MAINTENANCE FLIGHT OF CLASS NO. 29-B

Plans have been completed for the maintenance flight of Class No. 29-B of the Air Corps Advanced Flying School, Kelly Field, Texas. The students will make the flight in five echelons, landing at fields in West Texas, New Mexico, Arizona, and Louisiana.

The first echelon of the Attack Section and the first echelon of the Pursuit Section will leave Kelly Field on September 20th. The Observation Section leaves on September 23rd, and the second echelons of the Attack and Pursuit Sections start their flight on September 27th.

The students will visit Lubbock, El Paso, Marfa, Dryden, Fort Clark, Midland, Dallas, Amarillo, San Angelo and Abilene, Texas; Roswell, Albuquerque and Lordsburg, New Mexico; Tucson and Douglas, Arizona; and Barksdale Field, La.

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NEW AIRPLANES FOR KELLY FIELD

The number of BT-9 airplanes in use at the Air Corps Training Center has been augmented by eight, as a result of two recent ferry trips.

On August 9th, five officers from Kelly Field departed by train for Inglewood, Calif., returning with four BT-9's in normal time without mishap. The officers making the trip were Major Robert T. Cronau, Captains Harvey F. Dyer, Burton M. Hovey, Jr., and 1st Lieut. Samuel E. Anderson.

On August 20th, Captain Russell E. Randall, 1st Lieuts. Roger J. Browne, Charles H. Pottenger and 2nd Lieut. Clarence M. Sartain entrained for Inglewood and returned in due time with four new airplanes.

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The full-time school schedule at the Air Corps Tactical School, Maxwell Field, Ala., went into effect at Reveille on September 7th, and, according to the News Letter Correspondent, everything is getting settled down to normal for another nine months' school course. Furloughs and summer schedules will be forgotten for a while now.

THE NEW CLASS AT THE PRIMARY FLYING SCHOOL

The class which will begin flying training at the Air Corps Primary Flying School at Randolph Field, Texas, on October 15th next, will number approximately 216 students, comprising 106 2nd Lieutenants of the Regular Army who graduated from the U.S. Military Academy, West Point, N.Y. on June 12th, last; 103 candidates from civil life; four enlisted men of the Air Corps and three enlisted men from other branches of the military service.

A year of intensive training is ahead of these students who have elected aviation as their field of endeavor. The training year is divided into three stages, each of four months' duration - the primary and basic stages at the Primary Flying School at Randolph Field, and the final and advanced stage at the Advanced Flying School at Kelly Field, Texas.

Those students who successfully complete this one year's course will receive the rating of "Airplane Pilot." The officer graduates, who hold commissions in the various branches of the service, except the Air Corps, will be transferred to the Air Corps and will thus join the ranks of the permanently commissioned pilots of this branch of the service. The graduates among the enlisted and civilian candidates, who will train under the status of Flying Cadets, will be commissioned second lieutenants in the Air Reserve and placed on extended active duty with various Air Corps tactical organizations.

Among the candidates recommended by the Chief of the Air Corps for appointment as Flying Cadets, California, with eleven students, has the largest representation of native sons, followed by Texas with ten and Oklahoma with eight. None of the cities represented in this new class has more than two students.

It should be stated that the list of Flying Cadet appointees given below is only tentative and that it is subject to a number of alterations in view of the likelihood that, in the light of previous experience, some of the candidates recommended for appointment will probably decline same for sundry reasons, principally a change in their status since they first applied for appointment several months ago. Some may have secured a lucrative position in the commercial field, offering them a promising future, and some may have succumbed to the darts of Dan Cupid, thus rendering them ineligible for appointment. Further, it is almost certain that additional applicants will receive appointment before the time set for the class to begin training.

The names of the members of the June, 1937, West Point graduating class, who were assigned to the Air Corps for flying training, were published in the issue of the Air Corps News Letter of August 1, 1937.

The candidates thus far selected for appointment as Flying Cadets for the October 15th Class at Randolph Field are listed below, as follows:

CIVILIAN CANDIDATES

Bacon, Thomas Phillip	Bessemer, Ala.
Speer, William Arthur	Birmingham, Ala.
Hornsby, Claude Eugene, Jr.	Centerville, Ala.
Tuell, Joseph Charles	Bisbee, Ariz.
Roberts, John A., Jr.	Beebe, Ark.
Bylander, Richard Murray	Little Rock, Ark.
Crisp, John Duncan	Magnolia, Ark.
Smith, Weldon Holliwell	Berkeley, Calif.
Hunt, Snowden Morris, Jr.	Hollywood, Calif.
Rundquist, Eric Armand	Los Angeles, Calif.
Willard, Edward Dulaney	Modesto, Calif.
Murray, Samuel Fenton	Palo Alto, Calif.
Heinlein, Oscar Allen, Jr.	Sacramento, Calif.
Noguchi, David	Sacramento, Calif.
Knorre, Fred James, Jr.	San Francisco, Calif.
Stuart, Robert	San Jose, Calif.
Lindsay, James Robert	Santa Paula, Calif.
Nisbett, Charles Albert	East Hartford, Conn.
Manierre, Ernest Roderic	Hartford, Conn.
Carey, Raymond Joseph	Manchester, Conn.
Giesecke, Paul	Rockville, Conn.
Sullivan, Paul B.	West Hartford, Conn.
Lee, Woodrow Wilson	Washington, D.C.
Holcombe, Elton Earl	Atlanta, Ga.
Whitehouse, Robert Rempfer	Evanston, Ill.
Lawver, Lawrence Sterman	Freeport, Ill.
Patchell, Stephen Frank	Maywood, Ill.
Birthisel, Paul Lee	Park Ridge, Ill.
Hibbert, Richard B.	Ft. Benj. Harrison, Ind.
Eidson, Harry Taylor	Indianapolis, Ind.
Kuntz, Milton Erwin	Indianapolis, Ind.
Cole, Perry Sherman	Washington, Ind.
Kluever, Arnold F.A.	Atlantic, Iowa
Henselman, Donald	Holcomb, Kans.
Bach, Harmon	Jackson, Ky
Walker, Arthur James	New Orleans, La
Westbrook, Sam W.	Pleasant Hill, La.
Cully, Oscar DeWitt, Jr.	Baltimore, Md.
Bourgoin, Raoul Joseph	Frenchville, Maine
Casey, Edward Richard	Boston, Mass.
Feeney, Francis Robert	Boston, Mass.
Magri, Sebastian Michael	Lawrence, Mass.
Keshishian, Anthony	Lynn, Mass.
Smith, Robert Jay	Charlotte, Mich.
Vanderhill, Paul J.	Holland, Mich
Bullis, Harry J.	Portland, Mich
Carlton, John N.	St. Peter, Minn.
Maxey, Walter Loveless, Jr.	Brandon, Miss.
Hendricks, E.T.	Hattiesburg, Miss.
Prichard, William Jesse	Inverness, Miss.
Sparks, Walter William, Jr.	Inverness, Miss.
Longine, Houston Walker, Jr.	Silver Creek, Miss.
Householder, Leland Dana	Sedalia, Mo
Thurman, Wayne Earl	Lincoln, Neb
Sowinski, Edward	Las Vegas, Nev
McGinity, Frank Joseph	Danville, N.J
Marshall, Richard Skip	Newark, N.J
Healy, John Patrick	North Bergen, N.J.
Maday, Charles	Buffalo, N.Y
Mayer, Richard August	New York, N.Y
Macomber, Francis Allen	Rochester, N.Y
Quinn, Robert Sidney	Rochester, N.Y
Travis, Frank Hotchkiss	Tarrytown, N.Y.
Skow, Delmar Norris	Devils Lake, N.D.
Rockey, Guy Hamilton	Athens, Ohio
Wheaton, Robert Harvey	Athens, Ohio
McKechnie, Robert Ross	Cleveland, Ohio
Mason, Joe Lennard	Columbus, Ohio
Mauborgne, Benjamin Poore	Fairfield, Ohio
Hubbard, Ronald D.	Warren, Ohio
Seamon, Walter Earle, Jr.	West Jefferson, Ohio

Case, Albert North	Frederick, Okla.
Taylor, Carl Edwin	Hugo, Okla.
Sterr, Frederick P.	Lindsay, Okla.
Jacks, Angus	Macomb, Okla.
Hendrickson, Wylie Monroe	Norman, Okla.
Nothstein, Charles Lewis	Norman, Okla.
Reynolds, Thomas C., Jr.	Valliant, Okla.
Adams, Jack	Walters, Okla.
Sharp, Frank Douglas	Salem, Ore.
Wintermute, Ira Francis	Salem, Ore.
Leer, Edwin Harold	Vermillion, S.D.
Knieff, Claude Alexander	Brownwood, Texas
Stallcup, Weldon H.	Celina, Texas
Arnold, Walter Erath	El Paso, Texas
Cronkhite, Glen Iver	El Paso, Texas
Bradshaw, Thomas E., Jr.	Houston, Texas
Dunn, Frank Lowry	San Antonio, Texas
Garza, George J.	San Marcos, Texas
Johnson, Woodrow	Richland Springs, Texas
Hampton, Morrell Wade	Sherman, Texas
Reagan, Bruce Warner	Vega, Texas
Gilbert, Huntington Kerr	Dorset, Vt.
Smith, Charles John	Rutland, Vt.
Reed, Charles Wesley	Raymond, Wash.
Brimsmead, John C.	Seattle, Wash.
Rowland, Arthur William	Seattle, Wash.
Perkins, James Edwin	Bluefield, W.Va.
Humphreys, Milton Dayton	Marlinton, W.Va.
Kime, Duane Louis	Milwaukee, Wis.
Hubbard, Clenn Elwood	Durand, Wis.
Tietz, Edward Christian	La Crosse, Wis.
Bohnaker, William John	Platteville, Wis.

ENLISTED MEN (PRIVATES)

Air Corps

Young, Sig Rogers — Tucson, Ariz.
52d School Squadron, Randolph Field, Tex.
Staton, Jarrett A. — Hagerstown, Md.
28th Bomb. Squadron, Nichols Field, P.I.
Chittum, Matthew M. — Altoona, Pa.
Base Hqrs. and 1st Air Base Squadron, Langley Field, Va.
Baxter, Forrest Houston — Hazel, S.D.
53d School Squadron, Randolph Field, Texas

Other Branches of the Service

Green, Edwin Smith — Imperial, Calif.
Troop A, 11th Cavalry, Presidio of Monterey, Calif.
Wright, George — Buffalo, N.Y.
Post Q.M. Detachment, Fort Shafter, T.H.
Cammack, Charles A. — Portland, Ore.
29th U.S. Engineers, Portland, Oregon

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PROMOTION OF AIR CORPS NONCOM. OFFICERS

Personnel Orders recently issued by the Office of the Chief of the Air Corps announced the promotion of the following noncommissioned officers of the Air Corps, effective September 1, 1937, and their assignment to new stations, as indicated opposite their names, viz:

To be Master Sergeants, Air Corps

Tech. Sgt. Ballard B. Small, Hamilton Field,
Tech. Sgt. Elga M. Glendy, Chanute Field, Ill.
Tech. Sgt. Ruben St. John, Hamilton Field, Calif.
1st Sgt. Benjamin E. White, Bolling Field, D.C.*
1st Sgt. Joe G. Laver, Langley Field, Va.*
Tech. Sgt. Edcil C. Maxwell, Ft. Benning, Ga.*
Tech. Sgt. John P. Bollenbach, Fairfield A.D.
Tech. Sgt. Edward Miller, 8th Corps Area Det.

To be Technical Sergeants, Air Corps
(All Staff Sergeants)

Robert E. Rice, Hamilton Field, Calif.
Mathew A. McCraw, Hamilton Field, Calif.*
Anthony J. Gorges, Barksdale Field, La.*
Claud M. Gilbert, Mitchel Field, N.Y.
Raymond Kerr, Langley Field, Va.*
Asa C. Hoober, Langley Field, Va.*
Carrell L. Shaw, Randolph Field, Texas*
Edward L. Carr, San Antonio Air Depot, Texas
Charles Joyner, 9th Corps Area A.C. Detachment
Walter E. Banas, Rockwell Air Depot, Calif.
Michael M. Rozburski, Scott Field, Ill.
Roy D. Cheatham, Langley Field, Va.*
Myron Roeske, Moffett Field, Calif.*
Henry Franklin, Maxwell Field, Ala.*
Karl R. Johnson, Mitchel Field, N.Y.
Halstead J. Rowen, Barksdale Field, La.*
William K. Sheffield, Hamilton Field, Calif.*
Harry N. Fuecker, Hamilton Field, Calif.*
Adam J. Vielock, Hawaiian Department*
Paul Lash, Langley Field, Va.*
Jessy C. McConnell, March Field, Calif.*
George H. Oram, Chanute Field, Ill.
Jacob S. Brown, Mitchel Field, N.Y.
Clyde L. Falis, Fort Leavenworth, Kansas.
Edgar W. Gardner, Rockwell Field, Calif.
Alexander Kacziba, 3rd Corps Area A.C. Det.
Robert L. Barlow, Middletown Air Depot, Pa.
Grover C. Moss, Kelly Field, Texas*
August Schantel, Barksdale Field, La.*
James M. Caldwell, Bolling Field, D.C.
Louis A. Kirby, Fort Benning, Ga.
Michael Chuturich, 7th Corps Area A.C. Det.
Maurice Gorin, Mitchel Field, N.Y.
Homer H. Hunt, Mitchel Field, N.Y.*
Floyd H. Peacock, Fairfield Air Depot, Ohio.
James C. Elder, Langley Field, Va.

Note: Where an asterisk follows the name of the station, no change of station is effected.

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PLENTY OF RAIN IN THE PHILIPPINES

"Cancelled" in big red letters through the Flight Schedule every morning for ten successive days - reason - ceiling zero - visibility zero. "The rainy season is here to stay," says the News Letter Correspondent from Clark Field, P.I. "The highways and railroads between Clark Field and Manila were washed out, and for miles covered with up to twelve feet of water. The Third Pursuit with their ZB-3-A furnished Stotsenburg and Clark with their mail, daily paper, milk for the babies, and film for the evening movies until the waters subsided."

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Major Robert D. Knapp, Air Corps, formerly Director of Flying Training at the Advanced Flying School, Kelly Field, Texas, left that station on August 28th for Maxwell Field, Ala., where he will be a student at the Air Corps Tactical School.

Have you written a story of one of your flying experiences under the heading "And I Learned About Flying From That?" We would greatly welcome it for the Air Corps News Letter.

MATERIEL DIVISION NOISE-REDUCING PROGRAM
By the News Letter Correspondent

The chief sources of objectionable noises at Wright Field are the engine and propeller test stands. The worse of these, but fortunately the less frequent of operation, are the propeller test stands. For one whose work or residence may be in range, this noise is at times a persistent intrusion on attention, disastrous to rest or mental concentration. To this harassed individual it is small comfort to remember that the noise is part of a program necessary for the development of dependable airplane engines and propellers. He desires that his attention be free for application as he may direct it in his business or pleasure.

The Materiel Division, U.S. Army Air Corps, has long realized that noise is an unnecessary incubus of motor life and that its continued existence is especially inconsistent with the present fast developing sophistication with respect to home comforts. In 1931, when the old engine test stands burned, new stands were built with special provisions for reduction of noise. The test houses form a thick walled, concrete enclosure practically impervious to noise except through its relatively light doors and through the openings for the inlet and outlet of air in which the engine energy output is dissipated. These openings are in the form of short, vertical stacks arranged to direct the sound released through them upward but not horizontally. Flyers report that the noise from these stacks can be heard over the noise of the airplane at heights up to 5,000 feet. Also, in some engine test installations a device known as a test club can be used instead of a flight propeller. The test club loads the engine without producing as much noise as a flight propeller. The provisions for the reduction of noise just described, though entirely adequate in their time, have become inadequate for the highest powered engines now available. The practice has been to limit the testing of the highest powered engines to working hours. A similar policy has been followed in testing propellers.

Since it is highly desirable to operate tests continuously, the Materiel Division has under way a program for soundproofing all engine test stands. The soundproofing of one engine test stand is now complete. Even with the highest powered engines operating on flight propellers, the noise from this test stand would not be objectionable even at night to people whose homes are more than 500 yards from the test stand. The soundproofing consists, first, of placing sound absorbing material in the test noise stacks which are partitioned into a number of smaller stacks by the soundproofing material; second, of providing heavy doors covered with sound absorbent material and rigidly supported to prevent them vibrating as diaphragms.

Now ordinary field noises, such as birds, rustle of leaves or tall grass, or the distant rumble from a highway drown out the noise of the soundproofed stand anywhere beyond the limits of the flying field.

At present, the cost of silencing of propeller stands appears exorbitant, due largely to the size of the stands and the treacherous skip distances of sound; much like the skip distances the radio amateurs have to battle. Overhanging clouds, which control the point at which the noise pounces down on the unsuspecting ear drum, are hard to control. With further study in the acoustics of the problem involved, it is hoped that a ready and inexpensive solution will be evolved. Then the Materiel Division will be able to run a continuous 24-hour test of both engines and propellers and augment efforts to keep pace with other criteria of National Defense.

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CONTRACT AWARDS FOR AIR CORPS EQUIPMENT

The War Department announced on Septe[illegible]ber 9th the award to the Glenn L. Martin Company, of Baltimore, Md., of a contrac for spare parts for YB-10, YR-12 and B-10B Martin Bombardment airplanes in the total amount of $47,857.56.

Announcement was also made of the award of a contract to Manning, Maxwell & Moore, Inc., Bridgeport, Conn., in the amount of $47,310.50, covering the purchase of type B-2 Gage Units, and Type C-6 Thermostatic Assemblies and Data.

A change order on a previous contract was announced to the B.G. Corporation, New York City, covering the purchase of additional Spark Plugs amounting to $23,074.45.

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Majors Ira R. Koenig, Philip Schneeberger and Karl S. Axtater, Air Corps, who up to September 1, 1937, held temporary rank as such, were promoted on that date to the regular rank of Major.

The following-named second lieutenants of the Air Reserve were placed on extended active duty to September 4, 1940, at the Air Corps stations indicated:

Richard Filip Vavrina, of Angus, Okla., at Patterson field, Ohio.

Hiette S. Williams, Jr., of Concord, N.C., at Langley Field, Va.

William Iverson Marsalis, Findlay, Ohio, at Mitchel Field, N.Y.

Louis Matthew Gregory, of Shreveport, La., at Mitchel Field, N.Y.

"FLYING FORTRESSES" IN MANEUVERS ON WEST COAST

By the Langley Field Correspondent

During the month of August, the B-17's again proved their mettle. No less than nine of these popularly designated "Flying Fortresses" were concentrated in California to reinforce the 1st Wing, under Brigadier General Delos C. Emmons, during an interesting sequence of exercises which stressed flexibility of operations as well as the actually demonstrated mobility of supporting ground echelons. The movement west started on July 30th, when the Group Commander, 2nd Bombardment Group, Lieut. Colonel Robert Olds, in his B-17, No. 10, command plane, proceeded from Langley Field to March Field, via Barksdale Field, La., and El Paso, Texas, to complete advance arrangements. Majors Meloy and Haynes, with their respedtive 20th and 49th Bombardment Squadrons, arrived two days later. Major Harold L. George joined his 96th Squadron at March Field after a fast ferry trip from the factory at Seattle, Wash. Six C-33 Transports, under the able command of Lieut. Ott, of the Middletown Air Depot, moved the ground echelon to the West Coast and back, and with only three transports available during the exercises, every exacting requirement from the Group for the transfer of ground echelons was met to the complete satisfaction of the combat echelon. Lieut. Ott and his transport pilots performed an outstanding service to the Group which will long be remembered.

The Group immediately established Headquarters in the 1st Wing Administration Building. Three B-18's from Hamilton Field were attached to us for the duration of the exercises. Bombing training was conducted at Muroc Lake and at sea against aluminum slick targets for approximately one week, dropping 1,000 practice bombs on various types of missions.

After the last mission, Saturday morning, August 14th, the Group Commander ordered all B-17's to be prepared for the return flight to Langley Field. Commencing at 5:30 p.m., Monday, August 16th, all B-17's cleared March Field at 15-minute intervals for their home airdrome, via Barksdale, Wright and Maxwell Fields. Navigators received considerable celestial experience, as the planes had to go over the top, around and through the inclement weather over the Rocky Mountain area. The last two planes to take off encountered such a continuous line of electrical storms near Phoenix, Arizona, that they were forced to return to March Field. The crew of one of the latter, after a few hours' rest, took off at dawn for Scott Field, arriving after a nine-hour flight, thence to Langley Field in four hours. The other B-17 returned via Barksdale Field. All planes which were able to get through arrived at their intermediate destination in from eight to ten hours, and proceeded shortly thereafter to Langley Field. The C-33 transports ferried the maintenance and administrative personnel home on August 17th and 18th. The YOA-5 returned on August 19th.

Summing up the results of this exercise, the Group is more than pleased with the performance of the Air Corps new "Flying Fortresses." Every member of the Group feels that our West Coast mission was most successful and that we have made a vital stride in the defense of our country in the employment of the four-engine bombing type of airplane.

We wish to thank the officers and men of March Field and Hamilton Field for their cooperation and efforts in making our visit to their fields so pleasant, and await the opportunity to reciprocate the hospitality. We also extend our thanks to the officers and civilian personnel at Wright Field for the efficient cooperation in preparing the B-17's with the propeller brakes and navigation instruments in the short time available before the departure of the Group for the West Coast.

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91ST OBSERVATION SQUADRON ACTIVITIES

The 91st Observation Squadron, stationed at Fort Lewis, Wash., has just completed its second active participation in a major war game during this calendar year. The Third Division concentration, held at Fort Lewis in May, 1937, made extensive use of the Squadron, during which time its combat teams and airplanes were divided and assigned to both Red and Blue forces. The intensive cooperative training during this period proved to be of unlimited value to both the ground and air forces.

The Fourth Army Maneuvers, conducted at Fort Lewis during the period August 17 - 31, constituted the largest mobilization in the Pacific Northwest since the World War days. During the exercise, the 91st Observation Squadron was attached to the 41st Division, Blue Force (National Guard and attached units), and the 116th Observation Squadron (Washington National Guard) was attached to the 5th Brigade (Regular Army troops), who simulated the Red forces. This system of organizing the two opposing forces from both Regular Army and National Guard was found to have many training advantages in that it allowed each other to become familiar with the other's capabilities, limitations, and equipment.

Constant reconnaissance and simulated artillery adjustment during daylight hours, along with several night missions, kept every available combat team in the air an average of eight hours a day during the main problem. Needless to say, all concerned welcomed the news that a truce was declared. "We all feel," says the News Letter Correspondent, "that the maneuver was very instructive and that many 'do's' and 'don'ts' about air observation cooperation were learned by both air and ground forces."

A public anti-aircraft exhibition was held on Sunday night, August 22nd. The 63rd Coast Artillery (AA) from Fort MacArthur, Calif., set up their ground installation, consisting of latest anti-aircraft guns, sound detectors and searchlights on the Camp Murray site. The 91st Observation Squadron sent up five airplanes to simulate a bombardment attack on a powerhouse installation back of the front lines.

Blank ammunition fired from the ground gave the necessary realism to the picture. The exhibition continued by having one plane do fast maneuvers in an effort to evade the searchlights, and then a display of tow target operation by night as used for gunnery practice. An interesting sidelight to the show was the radio communication from the airplane to the ground, which was amplified over the loud speaker public address system and also sent over broadcast station KMO of Tacoma. The attending crowd, estimated at 15,000 people, expressed themselves very favorably regarding the entire event.

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SWEET STUFF FOR AIR CORPS PERSONNEL

Officers and enlisted men at the U.S. Army Air Corps detachment base at the Municipal Airport at Atlanta, Ga., had a "honey of a time" one day recently.

The special treat, great quantities of honey, was provided by Private Frank Heath who, in addition to being in charge of the grounds and shrubbery at the airport, is keeper of the bees. Private Heath, whose hobby is bees, donned his hive-robbing attire and relieved a hive of 80 pounds of honey, which he distributed among the officers and to the mess. He declared that he didn't feel a bit bad about robbing the bees of the honey, because they had filled the frames and there was no other place for them to put the honey they were collecting. He further stated that the bees have to travel the distance between the earth and the moon for every pound of honey, so that the honey he took from the hives represents forty round trips to the moon. Needless to say, Private Heath was a very popular individual at the airport on that particular day.

AIR CORPS PARTICIPATION IN LEGION PARADE

To demonstrate to the veterans of the World War and to the residents and visitors of New York the state of training in the Army Air Corps, the War Department ordered one hundred and fifty modern fighting planes, the pick of its air armada, to converge at Mitchel Field on Monday, September 20th, in preparation for the parade of The American Legion National Convention of Tuesday, September 21st.

At noon, at sunset, and at ten o'clock at night, while the doughboys of 1917-1918 keep step along New York's crowded streets, these planes, commanded and personally led by Major General Frank M. Andrews, Chief of the GHQ Air Force, will parade and maneuver in the air along the route of march.

Seven separate squadrons of the GHQ Air Force, from Barksdale Field, La.; Langley Field, Va.; Selfridge Field, Mich., and Mitchel Field, Long Island, will take part in these demonstrations.

Among the organizations ordered to Mitchel Field for this concentration are included:

Two 18-plane squadrons of the 3rd Attack Group, equipped with Northrup A-17 Attack planes from Barksdale Field;

One 6-plane squadron of Boeing B-17 "Flying Fortresses," 4-engine Bombardment planes of the 2nd Bombardment Group from Langley Field, Va.;

Two 9-plane squadrons of Martin B-10 Bombers from the 9th Bombardment Group, Mitchel Field, L.I.;

One 18-plane Pursuit Squadron, flying P-26 single-seater fighters from Selfridge Field, Mich., and

One 18-plane squadron from the 8th Pursuit Group, Langley Field.

After each demonstration, the planes will return to Mitchel Field. They are scheduled to depart for their home stations on Wednesday morning, September 22nd.

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On Friday, August 20th, the troops of the Hawaiian Department paraded in honor of Mr. Henry Morganthau, Jr., the Secretary of the Treasury of the United States. In spite of the extremely rough air, an impressive showing was made by the Air Corps units which turned out every available man for the ceremony.

The 18th Wing Navigation School, conducted by the Fifth Composite Group at Luke Field, T.H., is approaching the half-way point in its program, and the students can now be found wandering around at night looking for all the constellations for which the Greeks had words. Due to the absence of haze, the students are finding that they suffer for an over abundance of stars, making identification rather difficult.

A FORCED LANDING AT SEA

The Ninth Group Navigation School at Mitchel Field, N.Y., suffered its first forced landing since the inception of the School when Major U.G. Jones was forced to land an OA-4 on the sea south of Montauk Point, Long Island, on August 31st.

With 1st Lieut. Dwight Divine as navigator and a crew consisting of Private, 1st Class, Charles Rosenberg, radio operator; Privates Anthony Perrella and John Gogoj, Major Jones was performing a routine navigation mission over the sea south of Long Island and returning to Montauk Point for a landfall. When approximately 35 miles out, the right motor started vibrating excessively and the switch finally had to be cut. Forced landing signals were immediately transmitted to the 9th Group Radio Station VZ6, though Major Jones attempted to fly on one motor. The plane was landed at 1:50 p.m. on a smooth sea and the crew attempted to taxi toward Montauk.

By putting two men out on the wing, putting the left wheel down, and attaching a sea anchor to the left wing, the engine could be idled at 600 RPM, and some headway was made toward land in spite of a considerable drift towards the east.

Immediately upon receipt of the ZAF signal from Major Jones, the 9th Bombardment Group radio station, manned by Private H.E. Monoghan and Private D.A. McMorrow, transmitted this information to the Navigation School plotting room, operated by Sergeant Ira J. Clenny, 18th Reconnaissance Squadron. Coast Guard Headquarters in New York City was notified and asked to send aid, and two B-10B airplanes were dispatched to locate the Amphibian and stand by until surface craft could arrive.

At this time Captain J.K. DeArmond, Group Communications Officer, assumed charge of communications. Taking off within twenty minutes after receipt of the distress signal, the Bombers, one manned by Captain John P. Doyle, Jr., pilot; Lieut. D.P. Laubach, navigator; Sergeant J.H. Romatowski, radio operator, and Corporal J.J. Draus, observer; the other by Lieut. G.P. Moody, pilot; Captain F.B. Valentine, navigator, and Private, 1st Class, H. Cohen, radio operator, proceeded to the location given in the forced landing report and instituted a search for the disabled airplane.

After one hour and ten minutes, the first crew located the OA-4 in a thick haze, broadcast its location, and was joined by the second Bomber. The Coast Guard was notified of this location, which proved accurate within one mile, both through Group radio and by direct contact from the Bomber.

Too much cannot be said in praise of the rapid and efficient aid rendered by the Coast Guard of this district. The Cutter CAMPBELL was dispatched from Sandy Hook; the ACTIVE, a fast little surface craft of the sub-chaser type, from New London; an unidentified motor surf boat from one of the coastal stations near Montauk Point, and two Amphibians from nearby bases.

Radio contact was established on the Coast Guard frequency of 2760 KCs and maintained throughout the rescue operation.

At 7:10 p.m. Eastern Daylight Time, the ACTIVE, guided by a flare from one Bomber and by low altitude contact by the other, arrived at the location of the disabled amphibian after a fast run from the New London base, part of the way through a dense fog, took off the crew and prepared to tow the crippled airplane back to land. At this time the Bombers were relieved and returned to Mitchel Field. After a night enroute, during which it was necessary to attach a sea anchor to the tail of the amphibian to prevent yawing, the ACTIVE and her tow arrived at the New London Coast Guard base, and an incident, which could have been tragic but for smooth cooperation between all concerned, was marked closed. The principal lesson was further proof of the necessity, in emergency, of adherence to a pre-conceived plan in which all units furnish the service they are best qualified to perform.

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THE 3RD BALLOON SQUADRON AT FORT LEWIS

The 3rd Balloon Squadron, Air Corps, formerly the 19th Airship Squadron, of Langley Field, Va., and Moffett Field, Calif., has finally found its way into the great Northwest. Under the command of Major M.E. McHugo, Air Corps, the 3rd Balloon Squadron is now located at Fort Lewis, Wash.

The organization is rapidly rounding into shape as a balloon squadron and, in spite of the handicaps of operating from an outdoor bed and training new personnel, has been flying a type C-3 balloon daily since June 20th.

Construction on the hangar should be completed about November 1st, and it is hoped to have a new type C-6 balloon at about that time. All personnel are looking forward with a great deal of interest to field operations with this new mobile type of balloon.

Major Elmer J. Bowling, Captain Haynie McCormick and Warrant Officer Robert Lassiter are on duty with the Squadron, and, in addition, Major Clarence B.Lober Executive Officer of the Fort Lewis flying Field, is attached for flying.

THE DEATH OF MRS. GENEVIEVE M. SAVAGE

Believing that the many friends of Major and Mrs. Charles M. Savage who have learned of Mrs. Savage's death in an airplane accident on August 27th, the undersigned has gathered the following facts from the Bureau of Air Commerce and from Major Savage.

Mrs. Savage was flying a Ryan S-T, a metal, low wing monoplane, powered with a Menasco engine, which she had rented from the owner, and was flying to the National Air Races, where she intended to enter the Amelia Earhart Memorial Trophy Race.

On August 26th, Mrs. Savage flew from San Diego to El Paso, stopping at Yuma, Tucson and Lordsburg. She remained overnight at El Paso and departed at 12:25 p.m., September 1st, for Midland, Texas. She told the El Paso airport attendants prior to her departure that she was going to fly by way of Pecos and would land there if shortage of gasoline necessitated. She crashed at 2:30 p.m., near Rui Doso, Mexico.

As nearly as can be determined from reports received from persons on the ground, the following is about what happened: Mrs. Savage flew to the southwest after leaving El Paso in order to reach Pecos over the lowest intervening terrain. After she had been out an hour, apparently either due to a compass error, which her husband believes to have been the case, the country over which she was flying did not check with her map and she turned further to the south. Witnesses state that she made an effort to land on the American side east of Rui Doso, but took off again to avoid striking a fence. Very shortly thereafter she attempted to negotiate a landing on the Mexican side, where the terrain from the air would look much more favorable to landing. The elevation was high, the air was gusty, and the day was hot. This, combined with her earlier experience and her undoubted desire to make a very slow landing, probably caused her to stall and "fall in" from about 100 feet. The plane was a complete wreck, and it is believed that death was instantaneous.

"Gen," as we knew her, had been extremely interested in flying for a long time. As soon as possible she began to take pilot lessons and soon learned to fly. At the time of her death she had about 800 hours in the air and held a transport license from the Department of Commerce. Last year she flew very creditably in the Amelia Earhart Trophy Race, finishing third. She had participated in more than seventeen contests and had always placed among the first three. On her last flight she was not engaged in a race. She was making her way leisurely to the National Air Races, where she had planned to enter the plane, for which she was paying from her personal funds, in the Amelia Earhart Memorial Race.

Due to a cumulation of circumstances beyond her control, she suffered the same fate many another great pilot had been unable to beat before her time.

It should be a matter of great satisfaction to her husband, as it is to her many friends, that she was able to do what she loved best and was participating at the finish in an endeavor close to her heart.

"Gen" Savage has done a lot for aviation; she has left a host of friends in the flying world; up in the Valhalla of flyers they have moved over and made a landing place for a courageous flying woman.

IRA EAKER.

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SCHOOL ACTIVITIES AT CHANUTE FIELD

School activities at the Air Corps Technical School at Chanute Field, Rantoul, Ill., are now in full swing.

On September 1st, the following officers commenced the course in Maintenance Engineering:

Air Corps

1st Lieut. Clayton E. Hughes
1st Lieut. Thetus C. Odom
1st Lieut. Carl F. Demberg
1st Lieut. Charles B. Dougher
1st Lieut. Frank G. Jamison
1st Lieut. Richard M. Montgomery
2nd Lieut. Byron E. Brugge
2nd Lieut. Jack E. Shuck
2nd Lieut. Charles B. Harvin
2nd Lieut. Lawrence S. Fulwider
2nd Lieut. Burton W. Armstrong, Jr.

Marine Corps

Captain Zebulon C. Hopkins

Enlisted classes in the following courses commenced on August 30th:

- Airplane Mechanics
- Aircraft Armorers
- Aircraft Machinists
- Aircraft Welders
- Sheet Metal Workers
- Bombsight Maintenance
- Carburetor Specialists
- Instrument Specialists
- Parachute Riggers
- Photography
- Propeller Specialists
- Radio Repairers and Operators
- Electrical Specialists
- Air Corps Supply and Technical Clerks.

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Contributions to the columns of the Air Corps News Letter have not been received lately from Hamilton Field, Selfridge Field, Barksdale Field, Moffet Field, Rockwell, Fairfield and Middletown Air Depots. The mission of the News Letter is to cover all Air Corps activities. Please cooperate.

AVIATION ACTIVITIES IN NEW ENGLAND

By Captain Paul L. Smith, Air Reserve

New England would like to sound off in the Air Corps News Letter.

Up here in the First Corps Area we get such a kick out of reading about other Air Corps folks, scattered over the face of the globe, that we thought perhaps our activities might be of interest.

We haven't a great deal to offer, because the First Corps has only the one Regular Army station at Boston Airport, maintained primarily for Reserve training and to give the DOL boys the facilities to keep their hand in.

But New England has cradled many Air Corps officers, now far from home, and many Air Corps officers and enlisted men who once served at Boston might like to hear how things are going up here occasionally. So your brand new correspondent ventures the following:

Colonel John N. Reynolds, Air Officer for the First Corps Area, has been busy with CPX at Camp Devens.

The Boston Airport, owned and operated by the City of Boston, is rapidly becoming one of the finest in the country. With the help of WPA, huge cement aprons have been laid in front of the hangars. They are wide enough and long enough for take-offs and landings when winter comes with its snowstorms. Cement stripes for revving up before take-off are located at half a dozen points around the huge airport. There are three sets of powerful flood lights, and the smoke pot burns constantly.

Captain Richard E. Cobb, Commanding Officer of the Air Corps Detachment at the Boston Airport, has made many improvements in the year that he has been on the job. With the loyal cooperation of an efficient enlisted personnel, he has kept the equipment available for both regular and reserve pilots at all times.

At the present time, the First Corps Area has only three BT-9's, an O-25, a BT-2B and a PT-11 for the six New England States. However, we have been promised a couple of A-17's and a couple more BT-9's.

The enlisted personnel of the First Corps Area Air Corps Detachment at the Boston Airport held Organization Day in August, with a program of sports and what have you. Private Thomas J. Flaherty was given the efficiency award for the year. This award consists of having his name engraved on an attractive plaque, provided by the Air Reserve Association of New England. The plaque was designed and presented to the enlisted men at the Airport last year. It hangs in the day room, and the name of Henri Dionne appears as the winner in 1936. The winner each year is chosen by a committee of three, one member representing the enlisted personnel, while the other two members are the Commanding Officer of the Airport and the President of the Air Reserve Association. The men are proud of the plaque and strive for the award.

Captain Milton M. Murphy, who came to the First Corps Area about a year ago from March Field as the new Unit Instructor for the Air Reserves, has found a warm place in the hearts of the officers. He carried on an interesting and instructive series of lectures all through the winter and spring months, and is now preparing for the coming season. The Reserves meet the first Monday of each month for these lectures, and a business meeting, plus a bit of fun, at the Hotel Lenox in Boston. Visitors are cordially welcome.

Many of the Reserves are taking active duty now, two or three at a time, at the Boston Airport. They have formation, blind flying, cross-country and various missions. Some years the Reserves have been at summer camp on Cape Cod, with training in gunnery and bombing, but so many of the young reserves are now on the air lines, it wasn't feasible to try a camp this year. Not enough could take active duty at the same time.

Major Peter C. Borre, National Vice President; Major Howard W. Nester, President of the New England Department, and Captain Paul L. Smith, immediate past president of the Department, will be delegates to the National Convention of the Air Reserve Association of the United States at San Francisco in September.

Major Chris Ford, former Commanding Officer at the Boston Airport and now on National Guard duty at Cleveland, paid us a visit recently. Some of the boys hadn't seen Chris since he went to the Philippines.

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WAR DEPARTMENT ORDERS

To Bolling Field, D.C.: 2nd Lieut. Wilhelm C. Freudenthal, from Mitchel Field.

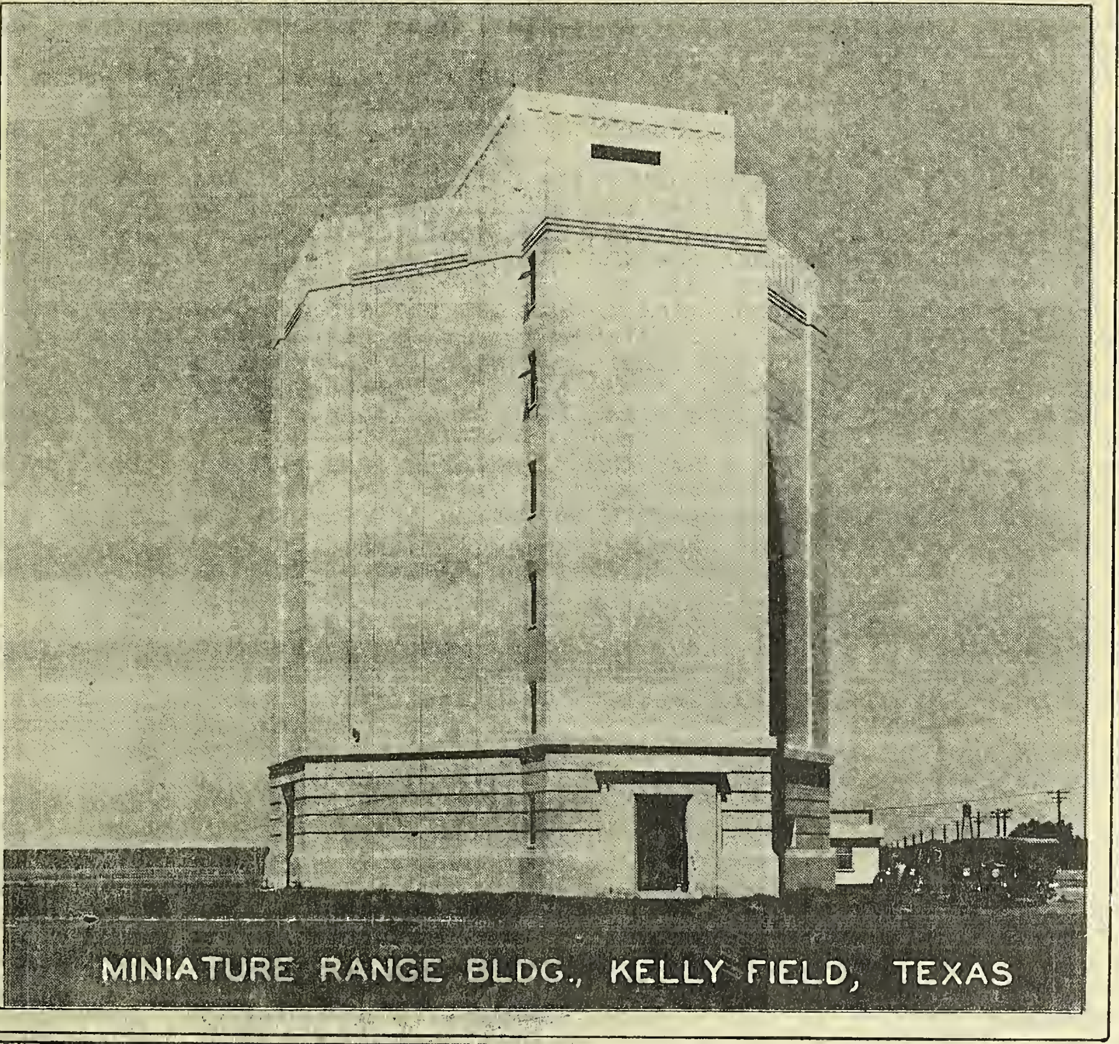
To Scott Field, Ill.: 1st Lieut. James A. Ronin, from Randolph Field.

To Charlottesville, Va.: 1st Lieut. Stanley R. Stewart, from Chanute Field, to take a course of instruction at the University of Virginia.

Master Sergeant Marion G. Putnam, Air Corps, is placed on the retired list at Hamilton Field, Calif., September 30, 1937, with the rank of Captain, under the provisions of an act of Congress, approved May 7, 1932.

Second Lieut. Joseph B. Parker, of Atlantic City, N.J., has been placed on active duty at Mitchel Field, N.Y., to September 13, 1940.

AIR CORPS NEWS LETTER



MINIATURE RANGE BLDG., KELLY FIELD, TEXAS

ISSUED BY
THE OFFICE OF THE CHIEF OF THE AIR CORPS
WAR DEPARTMENT
WASHINGTON

VOL. XX OCTOBER 1, 1937 NO. 18

VOL. XX AIR CORPS NEWS LETTER NO. 19.
Information Division
Air Corps
October 1, 1937.
Munitions Building
Washington, D.C.

The chief purpose of this publication is to distribute information on aeronautics to the flying personnel in the Regular Army, Reserve Corps, National Guard, and others connected with aviation.

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THE ARMY IS BEHIND ITS AIR CORPS

By Major General O. Westover, Air Corps
Chief of Air Corps

Some enthusiastic air-minded men in this country, both within the military service and without, have spared no pains to criticize the Army and the War Department for the way in which it has handled the development of military aviation. Some of these critics are professional agitators, men who have learned one of the cardinal principles of human interest and that is that all men love a fight - that controversy is a sure way to flag attention and catch popular fancy. For the most part, however, those who have been disgruntled at the way the air arm has been handled are simply misguided, misinformed. They are sincerely interested in an adequate and well balanced national defense. They have noted the great strides the air industry is making; they have looked across the water to European powers with vast air armadas and have jumped to the hasty conclusion that we are not doing so well at home.

Full well do I realize that nothing can be done to stifle the loud cries of the soap box variety of skilled agitators. They live by their words; their continued existence in the public prints depends upon the continuation of their attacks. They must flay somebody, and so the Army does not escape; it comes in for its share. But the others, those whose dissatisfaction results from misunderstanding of the facts or from incorrectly drawn conclusions reached from but a partial or hasty glance at the facts are worthy of attention. For their benefit I wish to present a clear review of what the Army has done to foster aviation, to show why it has not done more, and finally, to outline what its leaders have in prospect as the immediate program for further progress in the Army Air Corps.

I have heard the claim made, to begin at the beginning, that the Army, whose duty it was to realize that this new machine, the airplane, must have great influence on warfare, did not early arrive at that realization, did not recognize that the genesis of human flight must revolutionize if not the army at least the method of conducting wars. The records do not support that charge. As early as 1908 the Signal Corps of the Army drew up the first specifications for an Army plane and let the world's first contract for a military plane.

Again, it has been said that the Army, from 1914 to 1917, with the whole of Europe aflame, did not awake to the possibility that America should build up an effective Air Corps and be prepared for air fighting. In this connection two points are of interest: In the first place, no one in authority, not even the President, as late as 1916 believed we would be forced to enter the World War. We were a neutral nation, far removed geographically and by interest from the causes and reasons for the mad blood letting overseas. But here is the main point: The Army leader charged directly with the development of aviation at that time, the Chief Signal Officer of the Army, made a strong and an urgent appeal each succeeding year for funds with which to build up the Army's flying forces. Just the other day I was reading over the reports of the Chief Signal Officer for the years 1911 to 1916, and I found that every year without exception he plead for more funds, for more personnel, for more planes. For the sake of historical accuracy and human interest I want to quote briefly from these reports of General Allen, Chief Signal Officer, in his annual report to the Secretary of War:

> "The foreign nations have the following personnel now engaged exclusively in military aeronautics:
>
> England . . . 25 officers and 346 men
> France . . . 24 officers and 432 men
> Germany . . . 20 officers and 465 men
>
> The United States has at present a force of three officers and ten enlisted men to compare with the above figures. With the approval of the Secretary of War, an estimate of two hundred thousand dollars was submitted to Congress at its last session to make a beginning in the subject of proper aeronautical equipment and construction for the American Army. This appropriation, however, failed to be authorized, which fact placed this office at a disadvantage at a critical time."

That was General Allen, Chief Signal Officer of the Army, speaking in 1908 in his annual report to the Secretary of War.

In 1909 he said:

> "All first class powers, except the United States, are systematically providing themselves with aerial fleets, Germany and France being notably in the lead. The United States does not, at present, possess a modern aeronautical equipment and it is believed that a systematic plan of development of this military auxiliary for national defense should be inaugurated without delay."

In 1910 here are some sentences from his plea for sufficient funds to give the U.S. some aviation:

> "It is evident the United States should, without delay, make due provisions for carrying on aviation work for the various governmental departments interested and to extend the large number of American inventors and manufacturers at present devoting themselves to aerial navigation.
>
> Aerial navigation has taken hold of the entire civilized world as no other subject in recent times, and represents a movement that no forces can properly check.
>
> For military purposes aviation is a subject which we must seriously consider, whether we wish to or not, and the sooner this fact is accepted and measures taken to put us abreast with other nations, the better it will be for our national defenses."

That sounds so much like a statement in one of my own annual reports of recent years that I might easily be charged with plagiarism. It all boils down to one crucial fact - funds for the Army, be it for food, shoes, cannon or airplanes, are provided by Congress. The War Department does not have a limitless source on which it can draw drafts at will for any project which suits its fancy. These funds have been carefully budgeted for a long time. First, we make up estimates, then we defend these estimates item by item before sub-committees of the House and Senate Appropriations Committees. The legislative fathers then decide which of these items we can have money for and which we cannot. The War Department can only represent as strongly as possible all its needs, then take such funds as are allotted and spend them as appropriated, for the purposes given.

No, this charge will not stick; all the records year by year since 1908 are filled with pleas to Congress by military leaders in an effort to secure additional funds for its flying arm, for more men, for more planes, for additional housing, technical buildings, and ground installations.

Now, let us look briefly at what the War Department has done with the funds which have been allotted. Let facts and figures speak; let history be our witness.

The American Army bought and developed the first military airplane in the world. Very soon thereafter it organized the first aerial squadron, equipped it, and used it in connection with Pershing's Punitive Expedition. The World War brought an understandable inflation to Military Aviation in all the combatant nations. Since the European powers were engaged in that conflict for three years before the United States came in, it is perfectly clear why their air components developed first and faster, and why we, when we did enter the struggle, employed much of their materiel and profited by earlier experiments. This thought, however, should not be overlooked: In 1917, beginning with but a handful of Army flyers, and all of those very young, we were able to supervise the greatest mass expansion which ever occurred in any branch of the military services. In one feverish year and a half, the Army was able to procure more than 11,000 airplanes and 32,000 engines and train over twenty thousand flyers. I believe none will say that our fighting squadrons did not acquit themselves with complete credit to our nation in the air battles over France and Germany. Since the great expansion of military aviation in this country, from April, 1917, to November 11, 1918, was an unnatural growth made necessary by the frenzy incident to a great war, I shall pass over that period with but this hasty reference.

The period immediately succeeding the war years was a difficult one, indeed. It would have been a difficult period had some separate agency had control of military aviation. It was a period of discouragement for Army aviation. That is because we found ourselves with a great surplus of airplanes and engines which could not be junked but had to be used up at the peace-time rate in the post-war years. Having this great surplus, it was not apparent to the "fiscal fathers" why we should have new appropriations. Consequently, funds were cut to a cruel minimum. We had to discharge a great number of our officers and thousands of our enlisted mechanics, and could buy but few new planes until the old ones were worn out. Here, however, is one vital fact: The War Department, realizing that this condition existed, met it sturdily; but it did one other all-important thing. It laid the foundation for aviation experimentation and development. It created at Dayton, Ohio, an engineering division and allotted a great proportion of available funds to experimentation and development. That is the most important aeronautical step which has occurred in this country. That institution, now known as the Materiel Division, Wright Field, has developed into the greatest aviation experimental center in the world today. It has been largely responsible for the fact that the United States Army has fighting airplanes and engines the equal, and in many cases the superior, to those found elsewhere in the other nations of the earth, many of whom have been trying the independent Air Force experiment.

Not only was this far sighted policy of the War Department, in establishing the engineering division, to have such far reaching consequences in military aviation, but it was the greatest boon to civil aviation which occurred prior to the Lindbergh flight. Many of the developments originated at Wright Field and fostered and supported by Army experimental funds, have been taken over in whole or in part by the civil aviation industry, and have been responsible to a large extent for the progress which has been made in that field. I shall cite a few examples. The United States leaped to the forefront in world civil aviation largely because of its all-metal airliner construction. The first all-metal airplane in the world was built under the guidance and supervision of the Materiel Division at Wright Field, the Army O-19. Modern transport aircraft, with present tremendous speeds, owe their performance virtually to four things: First, one thousand horsepower light-weight airplane engines. Second, metal, low-wing monocoque construction; next retractable landing gears and, finally, adjustable pitch and constant speed metal propellers. Everyone of these inventions, discoveries or improvements is directly traceable in its initial inception and original trials to the Army Air Corps experimental engineering division.

Not alone in the experimental field has the Army led the way to the present air pinnacle. It is early realized that one of the essential components of any Air Force is a group of competent pilots. It therefore established at San Antonio, Texas, the Air Corps Training Center, known as the "West Point of the Air," which is recognized the world over as a model for aviation pilots' training. Here again, not only have Army flyers been trained, but the Army generously trained a surplus which could go to pilot the civil airlines. That the civil airlines were quick to profit from this reserve of trained flyers is attested by the fact that over fifty percent of the pilots who are flying great commercial vans today were Army trained.

I spoke before of the doldrum years, 1919 through 1926. During that time there was little civil aviation industry, aside from the few manufacturing plants, in this country. There was no civil demand for airplanes to keep these factories going. The Army wisely placed all the orders it had money for with these factories and supported their skilled personnel and aeronautical engineers throughout the lean years when there was nobody else to do it.

Military leaders recognized from the beginning that if aviation was to grow there must be created a public interest in it. The Air Corps began in the early days to create and stimulate this interest, as witness whereof I need only mention the first flight around the world by Army pilots in Army planes; the first transcontinental non-stop flight across the United States, by Army pilots, in an Army plane; and the first flight across the continent in the daylight of one day. In this same connection the Army sponsored racing planes and often led the world in flying speeds. It also realized the importance of altitude flying, increased interest in which is now evidenced by the pressure cabins and the stratosphere flights. Army pilots have set world's altitude records both for airplanes and balloons. It was not until 1927 when, under the stimulus and reawakened interest in aviation incident t Lindbergh's and other oceanic flights, the War Department realized it could tur over to civil aviation a large part of the work incident to making America airminded. Believing that it would tend to retard rather than develop civil aviation for the Army to continue in the racing field, it wisely stepped aside and left that field and many of the more spectacular record-setting exploits to civilian pilots and plane builders. In many other fields connected with aviation from its earliest date, the Army played a vital part; it flew the first air-mail and transferred to the Post Office Department the planes and pilots to continue the genesis of that system. It developed maps, laid out and flew the first model airway, designed and installed the first radio beacon, developed blind landing apparatus, and Army pilots made the first instrument landings, indicating the feasibility of defeating fog and heavy weather. That this experimentation and progress under the Army is still under way is evidenced by the fact that only last week Army Air Corps officers and engineers at Wright Field demonstrated a new apparatus and system whereby planes can be landed automatically without the aid of human hands. This I consider the last great step in eliminating flight hazard incident to zero visibility.

I think there is no better answer to the carping critics who have charged the War Department with mismanagement of things air wise than is contained in the following two tables. The first shows how much of the annual Army appropriation has been devoted to aviation. The year 1911 was taken as the beginning, for in that year for the first time appear direct appropriations expressly for aviation development and for aviation subjects. The year 1916 was included because it is the last year before the war. The World War years were left out because, as everyone knows, they represent an unnatural and abnormal expansion for all military budgetary items and in no way reflect anything except a frantic desire to win the war by buying, annexing or appropriating everything in sight which might conceivably lend pennyweight toward that end. The year 1925 has been included as a representative one in the mid-period between 1921 and 1932. After 1932, each year is shown as being of interest both because of being close at hand and because it shows the modern trend, expresses the influence of the depression and gives a basis for comparison with the appropriations of the past year:

Comparison of Expenditures of the War Department Military Activities and the Air Corps, direct and indirect, for the following Fiscal Years:

Fiscal Year	War Department (Military)	Air Corps Direct and Indirect	Percent
1911	$ 117,650,265	$ 25,000*	.02
1916	122,391,895	801,000*	.65
1921	292,886,375	32,332,907	11.04
1925	244,688,447	28,965,381	11.84
1930	327,363,054	59,981,778	18.32
1932	344,610,560	72,491,915	21.04
1933	293,314,497	57,755,448	19.69
1934	243,329,151	53,420,614	21.96
1935	273,485,712	68,365,771	24.99
1936	382,654,083	85,836,332	22.43
1937	394,095,800	96,872,333**	24.58
1938	393,460,400	101,851,424**	25.89

*Appropriated ** Estimatod

Next I include a table which illustrates for personnel what the preceding table shows for fiscal affairs. It is largely self-explanatory, but it shows a graphic picture. It demonstrates just how much of its total personnel strength the War Department has seen fit to devote to this air arm which it is so often accused of starving and neglecting. After careful study of these tables, I feel that those who have been hostile toward the Army's sovereignty over military flying will feel much less sure of their grounds.

For the benefit of the air enthusiast who is not a member of some one of the military services, I wish to say that many of the increases in personnel which the Army has allowed the Air Corps have been made at the expense of some one or several of the older arms. Often it has been necessary to render inactive or disband established battalions of Cavalry, Infantry, etc., to make it possible to provide for those additional Air Corps increments.

I feel that the War Department need not feel ashamed of the showing it has made in the air, nor fear just criticism for the way it has expanded the funds which have been made available for aeronautical purposes.

That the Executive Branch of the Federal government has continually striven to arrive at just and sound conclusions concerning its air arm and its management, is demonstrated by the fact that since 1919 more than thirteen separate and distinct boards, committees or commissions have been detailed or set up to investigate some phase of military aviation.

In 1926, the report of one of these boards, the Morrow Board, resulted in the enactment into legislation of the Air Corps Act of June 26, 1926, which provided for 1830 airplanes as the number which the Army Air Corps should have. Much criticism has been hurled at the War Department for not having carried out that program on time. Here again I must point out that appropriations, not authorizations, govern the amount of money which the Army can spend. Insufficient money was appropriated to buy the planes to meet that five-year program which was authorized in 1926.

In 1934, again sensitive to the demands being made from many sources that the air arm be augmented, the President appointed a commission, headed by the Honorable Newton D. Baker, to study the needs of the nation and make recommendations accordingly. This commission, after long and careful study, named 2320 planes as the proper figure to give this country adequate military air defense. In an effort to reach that agreed total more that one thousand planes were contracted for in 1937; funds have been appropriat-

TABLE OF COMPARATIVE STRENGTH

Year (June 30 each year)	Total Army Strength		Largest Branch Strength (Infantry)		Air Corps Strength		Comparison of Si Air Corps to Othe Combat Arms
	Officers	Men	Officers	Men	Officers	Men	
1911	4,281	73,454	1,471	24,878	6	60	-
1916	4,843	97,013	1,607	34,313	65	339	Last
1921	12,952	206,274	3,427	39,278	996	11,073	Last
1925	12,203	115,132	2,630	40,859	873	8,758	No. 5
1930	12,024	117,797	2,303	41,259	1,203	12,034	No. 4
1932	12,108	113,417	2,260	37,913	1,254	13,369	No. 4
1933	12,227	115,390	2,348	39,049	1,282	13,499	No. 3
1934	12,212	117,517	2,358	39,476	1,299	14,316	No. 3
1935	11,979	118,727	2,292	39,432	1,303	14,720	No. 3
1936	12,069	146,826	2,271	50,477	1,359	15,640	No. 4
1937	12,269	158,626	2,274	54,707	1,408	17,286	No. 4

ed for the procurement of an additional 700 in 1938 and the budget estimates for 1939 include money for 700 more. The Secretary of War, the Honorable Harry H. Woodring, but recently said that if we continue at our present rate, we shall arrive at the 2320 plane figure by 1940.

Here is a factor which often, I believe, has worked to the great detriment of the Army. Individual officers of the combat arms have grown so engrossed in the success and progress of their own branch that they have lost sight of the fact that all the branches are but members of a military team. It is being demonstrated on the battlefields of three continents in very recent times that battles are won and successful wars are fought not by the Infantry, the Artillery, nor the Air Corps, etc., but by teams composed of all these combatant arms ably supported by the supply and technical services. Without any one of these essential team members no fighting force can cope successfully with modern battlefield conditions.

Years ago, I am told, there was a feeling in some quarters, when any new arm or service was created, that it was an interloper, that it was stealing the money away from the older branches. That feeling undoubtedly was a holdover from the time when we had but a small standing army - few regiments at widely separated posts. The experiences of the World War should have washed away the last vestige of such a feeling. Thinking military men now realize that military strength cannot be counted in squads, troops, squadrons or even in divisions. As a matter of fact, man-power may not now be the true measure of military strength. Transportation, manufacture - all industry must be organized and mobilized to achieve a modern victory.

The point I wish to make is that, when men today, anywhere in the world, go to war they go primarily not as infantrymen, artillerymen or flyers, but as working members of the fighting team of combined arms. We of the branches must not let our ardour for our corps and services lead us into attacks upon any of the other branches. What chances of victory would a football team have if, in the midst of a touchdown drive, the quarterback and the full back suddenly quit the main effort and fell to fighting each other to settle some personal difference? Branch enthusiasm must never be allowed to engender branch animosities. If for the moment the requirements of existing conditions seem to make one branch more essential than the others, or indicate its increase in strength, we should remember that no wheel of fortune is so fickle as the wheel of the fortunes of war; the processes and methods in no art change faster. All of us in the not distant future may be overshadowed by some now non-existent arm or service which modern invention or discovery may elevate to prime importance. Who can say that a death-ray, a microbe corps or some other now visionary new arm may not rise up to overshadow us all?

We of the arms and services must bear well in mind that there sits at the seat of government a group of men who have impartially at heart the well being of all of us and whose perspective is not clouded by too close an association with any one element. Their program and plans are more than likely to have good reason and sound common sense in strong support. It behooves every intelligent military man to find out what that program is and support it without equivocation.

For several years now I have been in a position to be conversant with the War Department's plans and policies for military aviation and I can say positively, I cannot emphasize too strongly, that the military leaders are fully conscious of what the nation needs for air defense and they are sparing no effort to provide it.

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MAINTENANCE FLIGHT OF ADVANCED STUDENTS

Two echelons of the present class at the Air Corps Advanced Flying School, Kelly Field, Texas, are now on their maintenance navigation flight. They are composed of one-half of the Pursuit Section and one-half of the Attack Section.

The first echelon of the Pursuit Section is commanded by Major John V. Hart. His assistants are 1st Lieut. Nelson P. Jackson, 2nd Lieuts. William Eades and Chester L. Sluder. This echelon is composed of the following students: 2nd Lieuts. W.L. Kimball, W.M. McBee, C.M. McCorkle, C.M. Parks, T.C. Rogers, V.R. Shores; Flying Cadets W.M. Miller, M.L. McNickle, W.G. Miller, C.T. Olmsted, J.H Paul, A. Peterson, F.W. Rogers, F.O. Rindon, A.P. Tacon, J.F. Taylor, H.A. Torrey, D.L. Wilhelm.

This echelon is following the itinerary - Kelly Field to Abilene, Lubbock, Texas; Fort Sill, Okla.; Amarillo, Texas Roswell, New Mexico; El Paso, Marfa, Dryden, Kelly Field, Texas. Students will stop over one day at Biggs Field (El Paso) for maintenance of airplanes.

The first echelon of the Attack Section is commanded by 1st Lieut. John H. Ives, whose assistants are 1st Lieuts. Troup Miller, D.N. Crickette and H.S. Bishop. This echelon is composed of the following students: 2nd Lieuts. W.E. Covington, Jr., R.D. Gapen, G.P. Champion, W.G. Lee, Jr., F.R. Bell, R.H. Carmichael, J.J. Nazarro, F.R. Terrell, J.R. Kelly; Flying Cadets A.C. Agan, E.R. Barrett, R.D. Callaway, A.C. Carlson Jr., C.W. Field, E.B. Fletcher, F.B. Gallagher, C. Harper, C.J. Heflin. They are following the itinerary Kelly Field

Dallas, Midland, El Paso, Texas; Albuquerque, New Mexico; Amarillo, Texas; Fort Sill, Oklahoma; Dallas, Texas; Barksdale Field, La., Kelly Field, Texas, and any necessary intermediate points between these places. They will stop over one day at Fort Sill for maintenance of airplanes.

The Observation Section, commanded by Captain Russell E. Randall and assisted by 1st Lieuts. E.R. Todd, S.E. Anderson and W.L. Kennedy, was scheduled to leave Kelly Field on September 23rd for its maintenance navigation flight. The flight was to be composed of the following students: Major Lester T. Miller, 2nd Lieuts. E.S. Holmes, P.V. Kieffer, J.D. Rutledge, W.W. Jones, C.L. Hosmer, N.C. Spencer, C.B. Stewart, W.C. Barrett, J.K. Arnold; Flying Cadets E.H. Hulch, M.W. Schoephoester, U.B. Baker, F.W. Mills, W.A. Daniel, R.P. Carr, H.M. Truitt, K.A. Tyler, W.G. Ewing. The itinerary followed was to be Kelly Field, San Angelo, Lubbock, Texas; Roswell, New Mexico; El Paso, Texas; Lordsburg, New Mexico; Tucson, Arizona; El Paso, Marfa, Dryden, Fort Clark and Kelly Field, Texas. The one-day stopover for maintenance of their airplanes was to be at El Paso.

The second echelon of the Pursuit Section, commanded by Captain B.M. Hovey, with 1st Lieut. R.J. Browne, 2nd Lieuts. R.D. McCloskey and E.W. Osborne as his assistants, was scheduled to leave Kelly Field on September 27th with the following students comprising it: 2nd Lieuts. J.M. Bartella, C.K. Bowen, E.L.P. Burke, A.P. Clark, L.J. Ellert, F.W. Gillespie, C.T. Goldenburg, W.R. Grohs, S.W. Hulse; Flying Cadets F.J. Black, J.W. Bleasdale, R.M. Caldwell, E. Dyess, W.E. Elder, C.E. Grogan, V.M. Heath, J.W. Hughes, S. Maddux. Following the itinerary, Kelly Field, Dryden, Marfa, El Paso, Texas; Roswell, New Mexico; Amarillo, Texas; Fort Sill, Oklahoma; Lubbock, Abilene and Kelly Field, Texas, the flight was to stop over one day at Fort Sill for maintenance of airplanes.

Captain G.C. Jamison, with 1st Lieuts. C.H. Pottenger, R.B. Epler and 2nd Lieut. C.M. Sartain as his assistants, was to lead the second echelon of the Attack Section, taking off from Kelly Field on September 27th, with the following students: 2nd Lieuts. C.E. Coombs, C.F. Necrason, D.O. Monteith, C.U. True, J.W. Twadell, C.D. Vincent; Flying Cadets C. Hinton, H.F. Lowery, M. Pelham, C. Randall, F.J. Sutterlin, B.K. Vorhees, R.E. Warren, C.K. Wurzbach, C.H. Young, W.L. Younkin. The itinerary to be followed was to be Kelly Field, Texas; Barksdale Field, La.; Hensley Field, Texas; Fort Sill, Okla.; Amarillo, Texas; Albuquerque, New Mexico; El Paso, Midland, Hensley Field, Kelly Field, Texas. El Paso was to be the one-day stopover point for the maintenance of the airplanes of this flight.

PURCHASE OF ADDITIONAL MODEL BT-9C'S

On September 28th, the Secretary of War, the Honorable Harry H. Woodring, announced the award to the North American Aviation, Inc., of Inglewood, Calif., of an additional order on a previous contract for 34 model BT-9C airplanes and spare parts at a total cost of $411,500.90.

These thirty-four additional basic training airplanes are being procured especially for the training of Air Corps Organized Reserves in recognition of its importance in National Defense.

By taking advantage of the contract already under way, and exercising an option for increasing the contract, a considerable saving in individual plane cost is effected.

The BT-9C is a basic training plane powered with a Pratt & Whitney R-1340 "Wasp" engine. Thirty-three such planes have already been procured for the Organized Reserve of the Air Corps and 34 in the present contract increases to 75 the number of new planes to be available for the exclusive training of the Air Corps Organized Reserve.

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RESERVE OFFICERS ARRIVE AT KELLY FIELD

The following-named second lieutenants of the Air Reserve recently reported at Kelly Field, Texas, for extended active duty: Hugh O'Daniel, Stewart H. Murphy, Cecil Scott McFarland, Victor Frank Pixey, Charles Elmo Hart, Elmer Leroy Parsel, Roger Boyer Whitaker, Allan C. Longaker, Bernard M. Lloyd and Legrand J. Mercure. The last three named officers have been placed on temporary duty at Randolph Field. All of these Reserve officers have been assigned to the Flying Department, where they will instruct students.

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RETIREMENT OF NONCOMMISSIONED OFFICERS

The following-named noncommissioned officers of the Air Corps, were, under orders of the War Department recently issued, placed on the retired list, effective September 30, 1937:

Master Sergeant Marion G. Putnam on the west coast, following his return from the Philippines.

Master Sergeant William O. Trager at Randolph Field, Texas.

First Sergeant Edwin O. Booth at Chanute Field, Ill.

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Captain Herbert W. Anderson, Air Corps, stationed at Chanute Field, Rantoul, Ill., has been assigned to duty as Assistant to the Constructing Quartermaster, Denver Branch of the Air Corps Technical School, Denver, Colorado.

THE HAWAIIAN ISLANDS

By an Air Corps Officer who served there

Although a large number of Air Corps personnel has been stationed in or passed through Hawaii, there are still a number of individuals to whom that pleasure has been denied. Some of these latter will soon be ordered there for duty. Living conditions in Hawaii change so rapidly that many of the remarks of one who left Oahu in 1931 may be a trifle misleading, yet it is hoped that the Air Corps people who have not been to this territory may find items of interest in a short series of articles in the Air Corps News Letter, of which this is the first.

From a geological and geographical standpoint, the Hawaiian or "Sandwich" Islands are peculiarly interesting. The present group of islands constitute the most recently formed land body of any considerable size on earth. A flaw exists on the floor of the Pacific ocean, extending from the Siberian coast in a southeasterly direction. Evidence of many extinct volcanic islands to the northwest of the Hawaiian group exists in shoals and reefs, the islands themselves having been washed away through the ages since their formation. Geologists declare that disturbances of the ocean floor to the southeast of the "baby island," Hawaii, indicate that our remote descendants will see the formation of new islands further down the flaw. Hawaii, according to geologists, is 50,000,000 years old.

The present group consists of eight principal islands, namely: Kauai, Niihau, Oahu, Molokai, Lanai, Maui, Kahoolawe and Hawaii, the first mentioned being the oldest and the latter the youngest. It is said "Hawaii" was once two islands until the action of time, tide and erosion joined them together in such fashion that the neck between them is now a plateau ranging in altitude from sea level to as much as 5,000 feet above.

As the islands age, volcanic activity decreases, and of recent years only "Hawaii" has been the scene of actual eruption, although earthquakes are often felt throughout the entire group.

Obviously there is no native vegetation on these islands. Seeds floating on driftwood from various countries, lodging on the sandy shores, apparently took root and the growth spread. Some seeds were undoubtedly carried by far flying birds.

Animate life, except for birds and small animals which floated from Asia to the earlier islands, has been imported by man. Strangely enough, not a snake is to be found anywhere on the islands. One small rock island off the shores of "Oahu" is overrun by rabbits said to have been dumped there from a ship. Otherwise, and fortunately, not a rabbit is to be found. Territorial catastrophe would be wrought if rabbits were rampant in the extensive cane and pineapple fields.

Mongooses were imported to kill off the rats, but instead drove the rats into the trees where they depleted bird nests while the mongooses themselves destroyed eggs of ground-nesting species. Although efforts are being made to import game birds (pheasants and quail flourish on "Molokai" and banded doves are found on nearly all the islands) the "minah" bird, a burlesque edition of the robin, is the principal feathered inhabitant.

The result of volcanic activity and gradual building up of vegetation from many lands has been to make each island a constantly changing panorama to the motorist or flyer. In motoring around "Oahu," a view of typical Californian appearance, seen at one moment, can change in the next to a desert scene typical of the cactus country of West Texas and again change to a purely Hawaiian scene picturing cane and pineapple fields with the inevitable background of ocean and side views of two mountain ranges, one fairly free of clouds and the other either in the midst of heavy rainfall or covered by dense, rain-filled clouds.

Rainfall is the source of all fresh water supply. This is true to such an extent on the island of "Oahu" (where Honolulu is located and where all large business is carried on and most of the population of the group resides) that approximately 30 percent of all rainwater is utilized.

The principal crops of the islands, source of all export commerce, are cane, pineapple and "kona" coffee. The latter is not widely exported. Tuna fishing is monopolized by the Japanese-operated fishing trust, but the canned product ranks fairly high as an item of export trade.

Although the territory is particularly well known for the pineapples produced and canned by a process first made possible by the imaginative genius and determination of John Dole, a young New Englander, cane is really the ranking crop. The cosmopolitanism of the territory of Hawaii is the history of cane raising and sugar producing. This will be explained later.

Aside from the commercial aspects of Hawaii, the territory is of value to our country as its main outpost in the Pacific. It possesses tremendous value as a naval base which, in turn, must be held by our army. In consequence, the various army activities comprise the outlet for the energies of a large proportion of the white population. In succeeding articles will be pointed out interesting facts connected with the various army posts and military life in the islands.

It is not the intention of the writer to present a history or geography of this interesting group of islands, to describe the tactical problems confronting our armed forces stationed there or to advertise the territory to prospective tourists, all of which are far more ably covered elsewhere, but in succeeding articles it is hoped to give the impressions of and facts gleaned by one who has been there, who is glad to have been there and who hopes to return, in a manner which will interest the reader. Truly has the group of islands been aptly named "the paradise of the Pacific," paraphrased by our soldiers into the "parasite of the Pacific."

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NEW COMMANDER FOR 19TH PURSUIT SQUADRON

By Lieut. R.S. Schumacher, Air Reserve

The 19th Pursuit Squadron, Wheeler Field, T.H., welcomed a new "Skipper" in the person of Captain J.A. Ellison, Air Corps, who recently assumed command. The usual problems which are present in a Squadron when a change of commanding officers takes place were conspicuous by their absence. Captain Ellison fell heir to a smooth running organization and the future looks very bright. His predecessor, 1st Lieut. J.E. Briggs, Air Corps, headed the 19th since last November. During this time the Squadron was engaged in a well rounded schedule of activity, including inter-island flights, gunnery camp and joint Army and Navy maneuvers.

Always on the alert for ways and means to improve the tactics and training of the Squadron, Lieut. Briggs conceived and worked out a plan which shed much light on the controversy of Bomber versus Pursuit. In conjunction with the 50th Observation Squadron of Luke Field, which is equipped with B-10's, the 19th Pursuit Squadron towed targets through all zones of fire of both front and rear guns. The results were tabulated and percentage of hits registered on different approaches and positions. All who have seen the results agree that it is the best and most authoritative work of its kind yet accomplished on the subject.

Under Lieut. Briggs' command, the Squadron averaged 354 hours per month. All pilots completed their proportionate amount of the yearly Training Directive. Since he first assumed command, Lieut. Briggs worked incessantly toward a smooth running organization. Possessed of the happy faculty of making the men under him feel that they were working "with" him and not "for" him, he left a very smooth running unit.

NEW CHIEF SIGNAL OFFICER RADIO PIONEER

With the promotion, effective October 1, 1937, of Colonel J.O. Mauborgne to Chief Signal Officer of the Army with the rank of Major General, older Army officers recall some of his early experiments in the field of military communications, important among which were his early efforts to adapt radio to aircraft.

In 1912 General, then Lieutenant, Mauborgne installed a radio set in an Army airplane, devised the antenna and aided in the first air-to-ground radio communication in history. This primary effort occurred at Fort Riley, Kansas, in October of that year. Brigadier General Henry H. Arnold, Assistant Chief of the U.S. Army Air Corps, then Lieutenant, was the pilot of the plane. The radio operator who manipulated in the air the first air-radio set was Colonel Follett Bradley, now G-2, GHQ Air Force, Langley Field, Va., then a second lieutenant at Fort Riley, Kansas.

Lieut. Arnold had flown one of the Army's twelve planes to Fort Riley, Kans., in order that Lieut. Mauborgne might install a quenched-spark radio set which had been assembled by him, and with which it was hoped air-to-ground communications could be established. The purpose of the tests was two-fold. First, to send from an airplane in flight radio messages to a ground station, which had never before been done anywhere in the world, and to adjust artillery fire from an airplane, while the battery was firing at a target which the battery observer on the ground could not see.

Lieut. Follett Bradley was selected as the operator of the radio set, since he had had some experience in early radio work, and but recently had been transferred from the Navy where he had been radio officer aboard the battleship MICHIGAN.

On November 2, 1912, the experiment was made. Lieut. Bradley's messages transmitted by radio from Lieut. Arnold's airplane were clearly received by Lieut. Mauborgne, operating the ground station. The second part of the test - adjustment of artillery fire from an airplane, so that the battery could fire successfully on targets which its commander could not see, also proved successful. The same officers, radio operator, pilot, and ground radio operator - Bradley, Arnold and Mauborgne - successfully performed this test which marked another "first" in the world of radio - the first time artillery fire had ever been adjusted through the employment of observation and direction from the air.

For the third time in two years, Lieut. Mauborgne of the Army Signal Corps, cooperating with Army flyers, again introduced a new communications system to the world. In the autumn of 1914, for the

(Continued on Page 9)

AN ALOHA REVIEW FOR MAJOR GENERAL DRUM

By 1st Lieut. E.W. Suarez, Air Corps

Honoring Major General Hugh A. Drum, outgoing Commanding General of the Hawaiian Department, the 26th Attack Squadron, as part of the 18th Pursuit Group, participated in the greatest review since the World War.

The great review was held on the Division Review Field of Schofield Barracks, with all organizations of the Hawaiian Department participating. The Air Corps not only contributed the aerial review, but also exhibited 68 motor vehicles and marched two full massed battalions of 724 men.

The enormous amount of work required to prepare and coordinate such a large review is easily appreciated. With all of the transportation, pack mules, tanks, guns, etc., of one brigade of Coast Artillery, one brigade of Field Artillery, two brigades of Infantry, one Air Corps Wing, and numerous Special Troops, the problem of timing was of the utmost importance.

The review was complete, even to the gigantic mobile guns of the Coast Artillery. A month before the review was scheduled to take place, railroad tracks were laid on the parade ground for the railroad guns. New, speedy little tanks presented a grand climax to the part played by the ground troops in the greatest of military reviews.

The aerial review was participated in by two 0-33 Transports as the Wing Headquarters Flight, Martin Bombers from Luke Field, and Pursuit and Attack planes from Wheeler Field. The aerial review came as the climax to the ground review. With the passing of the airplanes, all equipment of the Hawaiian Department had passed before the Commanding General in the short space of two and one-half hours.

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AIRPLANES LAND ON NEW HICKAM FIELD

Far from being completed, Hickam Field is rapidly coming along and already has a complement of Air Corps mechanics and airplanes stationed on it, in the form of the 18th Wing Headquarters Flight. This flight, composed of 1st Lieut. Robert W. Warren, Air Corps, and eleven enlisted men, maintains three Pursuit airplanes for use of the Wing Commander and his staff, whose headquarters are at Fort Shafter, and an Amphibian airplane for use of the Hawaiian Department Airways Officer in making numerous necessary flights between the various airways stations on all the islands.

Wing Headquarters Flight was moved onto Hickam Field on September 1st, as it had become necessary to have the Air Corps represented thereon for various purposes. Completed projects and Air Corps equipment had to be accepted and guarded; the use of the field by numerous airplanes made it desirable to have mechanics available there. It has long been desired to have the Wing Staff's airplanes there so as to eliminate loss of time in traveling to and from Luke Field to fly, so this end is also served by stationing this flight at Hickam Field. A hangar had been entirely completed and accepted from the contractor. A small part of it now houses the four airplanes of the Wing Flight, while the enlisted men have found comfortable quarters in one of its offices. Inasmuch as no messing facilities are available, the men are transported to and from the King's Post - Kamehameha - for "chow."

So Hickam Field, if not yet an airdrome, is at least a mighty good flying field - with airplanes assigned. The one completed landing mat has been in use for several months, permission having been given for all military airplanes to land thereon, in order to help settle the new mat.

First Lieut. Robert W. Warren, Air Corps, Officer in Charge of the Wing Headquarters Flight, also Airways Officer of the Hawaiian Department, now has the distinction of being the first Air Corps Commanding Officer of Hickam Field. As duties pile up, this writer wonders if he will consider it a distinction - or - ?

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New Chief Signal Officer Radio Pioneer

(Continued from Page 8)

first time in history, he conducted successfully two-way radio communication between an airplane and a ground station by working with a complex receiver andtransmitting radio set which he built and operated and which he installed in a Burgess-Wright plane flown by Colonel H.A. Dargue, Air Corps, then a lieutenant.

During the 25 years which have elapsed since these tests of 1912, Lt. Mauborgne advanced through the various ranks in the Army Signal Corps, climaxed on Oct. 1st with his promotion to Chief of that Corps. For the past year he was Director of the Aircraft Radio Laboratory at Wright Field, Dayton, Ohio, and was concerned with late aircraft radio equipment, flying almost daily testing his new radio sets in the air.

General Mauborgne was born in the State of New York, Feb. 26, 1881, and is a graduate of the College of St. Francis Xavier.

A HUSTLING OUTFIT

That the Second School Squadron, Air Corps Technical School, Chanute Field, Rantoul, Ill., is one of the best outfits in the Air Corps is the contention of that organization's correspondent. He proceeds to support that statement with a few facts.

First fact: This organization is composed of "hustlers" who secure promotion and advancement by virtue of study and conscientious work. Of the 42 permanent members, less than 25% draw longevity pay, yet only three men draw a "buck" private's pay; two of these draw flying pay.

Just another example: Private First Class E.A. Richards, who came into the service on October 13, 1936, is now a crew chief on one of the Squadron's airplanes. Remarkable when one considers that airplanes in this Squadron are scarcer than hen's teeth, with the result that competition for crew chief assignment is something like the scramble for berths on an all-star football squad.

There is also the case of Private O.H. Reefer, who came into the service on October 20, 1936, and was advanced to crew chief. But for the fact that he is now in school, he would still be holding that assignment.

During the clean-up month of August, on Chanute Field, the Second School Squadron barracks were given a thorough going-over. Both the outside and inside of the barracks were painted and things were royally torn up around here for a good half of the month. The painting started in the east bay and everyone, with the exception of those students on furlough, had to move to the west bay. Luckily for everyone concerned, there weren't so many men left here that they couldn't be taken care of in the west bay. The interior of the barracks was painted gray and white, which gives it a very clean appearance, as well as making it lighter on the inside. And considering the age of the barracks and the other buildings on the field, our building looks very good. The outside was painted the usual olive-drab and was trimmed with white, giving a very neat appearance. The screens were all taken down, repaired, painted and replaced. The grounds surrounding the barracks were worked over, and everything as a whole looks nice. Who knows? Maybe some of our painters might turn out to be second Rembrandts or Leonardo da Vincis!

After the painting was finished, some of our men were put to work repairing the pool table. They practically tore down and rebuilt the whole thing. What with a half pound of plaster of paris, a hammer, a putty knife, a screw driver and a pair of pliers, all the jumps, bumps and cracks were taken out of the slate, the corner pockets re-braced and the felt covering put back in place. The only thing that wasn't done to it was a varnish job. And that would have probably been taken care off, too, had there been more time.

Now that the painting is finished, the men are comfortably spread out in both bays. Although they don't all have their same bunks and same neighbors, everything is running as smoothly as could be, and the men are enjoying the peace and quiet (????) of our routined life.

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TRAINING BY THE 5TH COMPOSITE GROUP

Training by the 5th Composite Group, Luke Field, T.H., during the month of August included completion of half the required field duty, which is accomplished on the other side of the Island of Oahu and at South Cape, the most southerly part of the Island of Hawaii.

Duty at Waimanalo, on Oahu, has proved to be very popular with all personnel, due to the excellent facilities for swimming and athletics in general after duty hours. In fact, it is noted that there is great wailing and gnashing of teeth from personnel who for various reasons are unable to accompany their outfit. On the other hand, South Cape presents a slightly different situation. From a training standpoint it offers excellent opportunities for personnel to become acquainted with the topography of the largest Island of the Hawaiian Group. It is, however, deficient with respect to facilities for recreation, except for embryo entomologists. In this field, it is unsurpassed, due to the presence of some several millions of the black widow spiders, mentioned elsewhere in this issue of the News Letter. "At this writing," says the News Letter Correspondent, "it is planned to send a cargo of large toads down in the hope that the resultant strained relationships will cause the widows to evacuate. Further research is being carried out to attempt to find some other variety of spider with a native dislike for pests. Suggestions will be welcomed."

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"EGLIN FIELD"

The Bombing and Gunnery Base at Valparaiso, Florida, which is a part of the Headquarters and Headquarters Squadron of the Air Corps Tactical School, Maxwell Field, Ala., has been redesignated "Eglin Field," Valparaiso, Florida, in honor of Lieut. Colonel Frederick I. Eglin, Air Corps, who was killed in an airplane accident near Fort McClellan, Alabama, on January 1, 1937.

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BODY OF MISSING FLYING CADET FOUND

The great Texas aerial search for Flying Cadet Guy W. Edgerton came to an end on September 13th. The body of the Flying Cadet and the wreckage of his airplane were encountered in a thickly wooded section twelve miles southwest of Grapeland, Texas, by Isaac Johnson, a farm worker, who, in searching for stray cows, stumbled across the twisted and scattered plane and its occupant. He immediately notified officials of Grapeland, who communicated with the Commanding Officer of Kelly Field.

Flying Cadet Edgerton was a member of the night navigation training flight of the Attack Section of the Air Corps Advanced Flying School, which was returning from Barksdale Field after dark. The flight encountered a storm, but all members of the flight, except Flying Cadet Edgerton, landed safely at some point in Texas.

The plane did very little damage to the trees and brush, making it practically impossible for aerial searchers to locate the wreck. Examination of Cadet Edgerton's parachute showed that he had made no effort to use it. Neither had he dropped any flares.

The remains of Flying Cadet Edgerton were sent to Kenly, North Carolina, accompanied by Flying Cadet Francis J. Black, Jr.

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ARTILLERY ADJUSTMENT TRAINING AT FT. SILL

The ten student officers and ten flying cadets of the Observation Section of the Air Corps Advanced Flying School, Kelly Field, Texas, began their Artillery Adjustment training at Fort Sill, Oklahoma, on August 29th. To carry out this training, two batteries were assigned to fire daily, one from the 1st Field Artillery and one from the 18th Field Artillery. Firing commenced on August 30th, at 7:00 a.m., both batteries being assigned targets on the same range. Battery commanders had their CP's in the balloon hangar, with telephone lines to the batteries. All ground instruction and assignment of missions were conducted from this location. The students fired six problems each, with an average of 67 rounds, as follows:

(1) A pre-arranged bracket adjustment with H E shell.

(2) Target located by the observer and designated by means of a base point; smoke and shell bracket adjustment.

(3) Target located by the observer and designated by means of a reference point; ladder bracket adjustment with smoke, followed by H E shell.

(4) Target located by the observer and designated by the Lay-on-me method; bracket adjustment; voice communication.

(5) One-gun precision adjustment, with six rounds of improvement fire.

(6) One-target method, coordinated with the 5th problem, using the entire battery for a four-gun precision.

The batteries were exceptionally fast and the adjustments proceeded rapidly. In the opinion of the Senior Instructor of Observation, the students accomplished their missions in a manner which was a credit to themselves and to the school. Upon completion of flying each morning, students maintained their own airplanes. The afternoons were used for recreation.

Two mornings were devoted to sending one-half of the class at a time to the battery positions to observe gun crews in action and to get a comparison of aerial versus terrestrial observation. Firing was completed on Friday, and the airplanes made ready for the return flight to Kelly Field. This return flight was made via Fort Worth and Dallas, Texas, on Saturday, September 4th, with both members of the Observation team flying an instrument mission under the hood.

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MORE WEATHER MEN IN THE MAKING

As a part of the program of organization of the newly constituted Air Corps Weather Service, a school for enlisted forecasters has been established at Patterson Field. This unit of the service has been designated as the Air Corps Weather School. Lieut. Colonel J.H. Houghton, Air Corps, is the Commandant, while Captain Don McNeal, Signal Corps, has been appointed Assistant Commandant and Senior Instructor.

The course of instruction is designed to prepare men, who have had several years' experience as weather observers, and who have a basic knowledge of elementary meteorology, mathematics and physics, for forecasting duty at Air Corps flying fields. The curriculum includes a course in physics commensurate with first year college work, mathematics, embracing algebra such as is offered in normal first year college algebra, expanded to include some work in trigonometry, and a course in meteorology to include the modern theory of air mass analysis and the structure of atmospheric formations based upon the polar front theory. Approximately one-half of the school time is used in preparation of practice forecasts.

The school has a capacity for a class of 25 students. Two classes will be conducted each year, the course of instruction extending over five months. The first class started on September 1, 1937.

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During the month of August, the Engineering Department of the San Antonio Air Depot, Duncan Field, Texas, overhauled a total of 20 airplanes and 49 engines, and repaired 42 planes and 23 engines.

SNAKES AND INSTRUMENT FLYING

A friend and well-wisher of the Air Corps News Letter, Captain J.B. Burwell, of Randolph Field, Texas, takes issue with the editor on two statements which recently appeared in this publication, one concerning the length of snakes native to the wilds of Texas, and the other in regard to the date instrument flying was introduced in the course of instruction at the Air Corps Training Center. Captain Burwell is assured that we appreciate his bringing these two matters to our attention and that the News Letter is ready and willing at all times to publish corrections on statements which prove misleading.

Now in connection with the question as to the length of snakes in the Lone Star State, Captain Burwell invites attention to the fact that on page 4 of the June 1st issue of the News Letter, under the heading "Artillery Firing at Camp Stanley," the Kelly Field Correspondent indicated that two very large rattlesnakes, ten feet long, were found in the vicinity of the battery position. An editorial note at the bottom of this article reads as follows:

"According to an authority on reptiles in the State of Texas, the largest rattler discovered in the Lone Star State measured seven feet, and that was way back in 1888. He states that they don't grow that long nowadays, averaging five feet in length."

Captain Burwell enclosed with his letter to the editor a photograph and news item which appeared in the August 21st issue of the San Antonio EVENING NEWS, and which describes a rattler measuring seven feet, two inches, after most of the head was gone, and of sufficient size to be making away with a deer at the time it was killed. He then goes on to say:

"In the fall of 1927, while hunting on the King Ranch between the town of Norias and the Gulf of Mexico, a strip of land ten or twelve miles long with neither roads nor hardly trails through it, I saw a rattler considerably larger even than the one pictured in the inclosure. Unless my memory fails me, this rattler was about seven feet, eight inches long, and its skin was about a foot wide when laid flat. It so happens that there were some rather reliable witnesses to this snake story. They were Mr. Charles Young, son of Owen D. Young, and now a famous engineer with General Electric, and Mr. H.H. Adams, who at that time was Vice-President of the General Electric Company.

I had no part in the killing of this snake, but vividly remember unrolling this huge skin on the floor and deciding then and there that boots were no protection, and in spite of the danger of horseback riding took to horses for the remainder of the hunting trip.

Incidentally, and this part will probably also draw a smile of amused doubt from you, we had seven leopard cats and four bob cats staked out in the yard at one time. We used bulldog collars, cow chains and iron stakes. To substantiate this story, I brought one of the live cats back to Kelly Field and kept it in a cage back of the bacheler building for some time. Being unable to make any progress towards taming it, I had to kill it. Mrs. Goldsborough, whose husband, then "Lieutenant" William C. Goldsborough, was stationed at Kelly Field, took a particular liking to this cat but was also unable to tame it."

Now, taking up the subject of instrument flying at the Training Center, Captain Burwell goes on further to say:

"We were going to pass up the lack of belief in our snake stories, but when it comes to the training, we will really take issue with you. In the August 15th issue of the News Letter, on page 17, the statement is made that Major Ocker's demonstration box was adopted by the Air Corps as routine in May, 1934, and it is implied that actual instrument flying in the Air Corps Training Center followed this.

As a matter of fact, Major Ocker was invited by those of us who were then instructing in the Pursuit Section at Kelly Field to come over and show us his earliest instruments to be used in connection with blind flying. This was in 1929, when not only the majority of officers in the Air Corps, but nearly all pilots thought they could fly blind without instruments.

By January, 1930, these experiments in the Pursuit Section, with the full cooperation of Major Ocker, had proven to our satisfaction that instrument flying was the coming thing and that a course should be presented in this subject. Accordingly, instrument flying for a nucleus of instructors was initiated early in 1930, and the students in Class No. 7B, March to June, 1930, received some instruction in instrument flying. Due to equipment delays and difficulties, however, all members of the class did not get the full course, but beginning with Class No. 8B, July to October, 1930, all students received a full course in instrument flying.

It is believed that these were the first modern courses in instrument flying to be presented to flying students anywhere in the world. It can be seen that the statement which appears on page 17 of the August 15th issue of the News Letter is in error by nearly five years."

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AN ADVENTURE IN THE JUNGLES OF PANAMA

A C-27 (Bellanca) with rations and supplies left Albrook Field, its home station, with rations and supplies for the gunnery range at Rio Hato and El Volcan, Republic of Panama, with 2nd Lt. Thomas J. Schofield, Air Reserve, 80th Service Squadron, as pilot; Corporals, AM 2nd Cl. Callum M. Brooks and Newton D. Hagins, 29th Pursuit Squadron, Privates Glenn W. Vail, Norman C. Hill and Alfred A. Forrest, 80th Service Squadron, as passengers.

Weather conditions were excellent at Rio Hato, but the sky was filled with large towering cumulus clouds. Lieut. Schofield climbed steadily until he reached an altitude of 10,500 feet. After flying for some time at this altitude, he saw ahead of him a darker area than that in which he had been flying, with clear streaks through it. Lieut. Schofield then aimed at some of these clear streaks, and at that time his altitude was about 9,500 feet. He banked his plane 90 degrees to the right, which brought him into a clear area. As the plane was still in about a 45-degree bank, he attempted to level the plane, when a violent shuddering occurred and then a loud blast.

Three of the men were thrown violently out of the ship as a result of the concussion. Some were unconscious and did not know how they got cut, let alone how they pulled the ripcords of their chutes. Happy landings were made in trees and other places. Some even landed in a corn patch. After ascertaining that no serious damages were sustained by the men, first aid was rendered with iodine in the jungle kit. The men then tried to go to some native huts which, before landing, had seemed much closer to them than the spot at which the airplane had crashed. This took a journey of approximately two hours. At this time, some Indians, attracted by the crash, came upon the men and wanted to take them to their huts, but they refused to go with them to the site of the wreck. To add to their misery, it started to rain, and when it rains in Panama it rains. Tired and hungry, the men gave up and went back to the huts.

Signal fires were built the next morning, and one of the men was sent out with a party of Indians to try and retrieve as many of the parachutes as possible. In the meantime, a searching party was sent out from Albrook Field to locate the whereabouts of the C-27 and its crew.

Fortunately, one of the Indians could speak Spanish and knew the trails. This guide volunteered his services and, after traveling over almost impassable trails for two days and a night of continuous going, they arrived at El Jobo, Republic of Panama. It will be surprising to some that a trek of approximately 15 miles should consume so much time, but "Lady Luck" smiled on them by setting the crew of the ship so close to a trail of any sort. You see, much of Panama, even though close to the National Highway, is without any means of communication whatsoever. At El Jobo, Lieut. Schofield and the rest of the passengers were picked up and ferried in O-19's to David, Republic of Panama.

It was a thankful and grateful group that was brought back to Albrook Field. They were none the worse for their experience, except for minor abrasions received while battling their way through the dense undergrowth of the jungles of Panama.

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SECOND BOMBARDMENT SQUADRON NOTES

Lieut. Colonel Robert Olds, Commanding Officer of the 2nd Bombardment Group, Langley Field, Va., gave a short lecture on the "Flying Fortress" to the Coast Artillery Class of 1938 from Fortress Monroe, Va., on their annual inspection of Bombardment type airplanes.

The 2nd Bombardment Group made a nonstop flight to the Cleveland Air Races on September 4th. The Group was met at Akron, Ohio, by the 8th Pursuit Group and was escorted to the Cleveland Airport, where it played an outstanding part in the Army Day Air Pageant.

The Navigation Unit of the 2nd Bombardment Group started class on September 7th, with Lieut. John W. Egan as senior instructor and Lieut. Clifford H. Rees as assistant instructor. The present class is composed of Captains Benjamin W. Chidlaw, James M. Fitzmaurice, William D. Old, Lieuts. John S. Mills, William C. Bentley and Russell L. Waldron. The course consists of lectures and practice flights on Dead Reckoning and Celestial Navigation.

The 20th Bombardment Squadron recently completed a week of field training, September 13th to 18th, at Virginia Beach, Va, which was enjoyed by everyone. Aerial gunnery was the order of the day, and at 5:30 a.m. every day, the "rat-tat-tat" of machine guns awakened the mermaids off the Virginia coast. Even though the season was officially over at the seaside resort, the ocean was enjoyed as well as numerous other diversions.

Lieut. Adair, of the 96th Bomb. Sqd., and one of its expert bombers, joined the Eastern Air Lines. We wish him a world of success in his new venture.

BIOGRAPHIES

LIEUT. COLONEL WILLIAM E. LYND

Lieut. Colonel William E. Lynd, Air Corps, now on duty as a student at the Naval War College, Newport, R.I., was born at Santa Fe, Kansas, September 10, 1893. After graduating from business college at Boise, Idaho, and attending the University of Washington at Seattle for one year, he was later admitted to the Idaho bar and was a practicing attorney until he entered the military service.

On December 16, 1915, he enlisted in the 2nd Idaho Infantry, which was in the Federal service from July 1, 1916, to January 27, 1917, and stationed on the Mexican Border. On March 27, 1917, this regiment was again mustered into the Federal service, being mobilized at Boise Barracks, Idaho. It was stationed at Camp Greene, Charlotte, N.C., from September 24 to October 24, 1917, during the course of which it was converted into the 146th Field Artillery; at Camp Mills, N.Y., for one month; at Camp Merritt, N.J., for a similar period, and then, on December 24, 1917, sailed for overseas service.

Colonel Lynd served with his regiment as Regimental Commissary Sergeant from May 1, 1916, to April 4, 1917, on which date he was commissioned a second lieutenant. He was promoted to 1st Lieut. on October 20, 1917. While in France, he attended the artillery school at Camp de Souge. On February 22, 1918, he was detailed to the Air Service to receive observation training. After graduating from the Observation School at the 2nd Aviation Instruction Center at Tours, April 3d, he was attached to the instructor staff at this school as instructor in Infantry Liaison and Photography until June 8th, following which he graduated from the Aerial Gunnery School at Cazaux on June 30th, and from the Second Aeronautical School, A.E.F., at Chatillon Sur Seine on July 28th.

Assigned to duty at the front, he reported to the 135th Observation Squadron as an observer on August 4th, and on the 19th of that month he was appointed Operations Officer. From October 15 to November 20, 1918, he served as Operations Officer of the 4th Observation Group, and as Adjutant of the Observation Group, 2nd Army, to December 28th. He then assumed command of the 85th Observation Squadron and served therewith for several months at Senzig, Germany, as part of the American Army of Occupation. Returning to the United States on July 29, 1919, he was shortly thereafter honorably discharged from the service.

Commissioned a 1st Lieutenant in the Air Service, Regular Army, on September 17, 1920, with rank from July 1, 1920, Colonel Lynd was subsequently promoted to Captain with the same date of rank. His first station as an officer of the Regular Army was Post Field, Fort Sill, Oklahoma, where he reported on October 27, 1920, and was assigned as student to take a refresher course in Observation. He was appointed Director of the Air Service Observation School on November 23, 1920, and served in this capacity until January 10, 1921. He was then assigned as student at the Field Artillery School of Fire at Fort Sill and, upon the completion of the course at this School, April 9, 1921, he served as Officer in Charge of Training at the Air Service Observation School until August 3, 1921, and as Secretary thereof in addition to duty on the Academic Board until December 8, 1921.

Assigned as a student at the Primary Flying School at Carlstrom Field, Arcadia, Fla., where he reported on January 21, 1922, Colonel Lynd graduated therefrom as an honor student in the following June, and was then assigned to the Advanced Flying School at Kelly Field, Texas, where he completed the Bombardment course on December 17,1922, and received the rating of "Airplane Pilot." On January 2, 1923, he was assigned to the command of the 40th School Squadron, 10th School Group. He served in this capacity until he reported in September, 1923, as a student at the Air Service Tactical School at Langley Field, Va. Following his graduation from this School in June, 1924, and after duty during the summer months at an ROTC camp at Maxwell Field, Ala., he returned to Kelly Field and assumed command of the 42nd School Squadron, with additional duty as Instructor at the Advanced Flying School. On January 16, 1925, he was relieved from command of the above Squadron and appointed Director of Basic Training, Advanced Flying School.

On December 21, 1925, Colonel Lynd was appointed Director of the Academic Department of the Advanced Flying School, and he served in this capacity and later performed various other functions at Kelly Field, including duty as Director of Training, from January 31, 1928, until November 30, 1928, when he was assigned to special duty at the Headquarters of the Air Corps Training Center at Duncan Field, Texas. On January 3, 1929, he was appointed Director of Training at the Air Corps Training Center.

Ordered to duty in the Office of the Chief of the Air Corps, Washington, D.C., in April, 1929, Colonel Lynd was assigned to the Inspection Division, where his work in large measure was connected with the Visual Inspection System. On August 6, 1930, he was assigned to Crissy Field, Presidio of San Francisco, Calif., and he served as Commanding Officer and Operations Officer at that field until

October 4, 1930, when he was transferred to Mather Field, Calif., where he performed duty as Commanding Officer of the 20th Pursuit Group Headquarters and Post Operations Officer until August, 1931.

Following duty as student at the Command and General Staff School, Fort Leavenworth, Kansas, for two years, Col. Lynd, after his graduation therefrom in June, 1933, and from the Army War College in June of the following year, was assigned to station at Mitchel Field, N.Y., until March, 1935, when he was transferred to the Office of the Chief of the Air Corps, Washington, D.C., for duty in the Plans Division. He served in the Chief's Office until June, 1937, when he was assigned to his present duty as student at the Naval War College.

Colonel Lynd was cited for gallantry in action during the World War and awarded the Silver Star, the citation therefor being as follows:

"William E. Lynd, captain, Air Corps, then first lieutenant, 135th Aero Squadron, Air Service, American Expeditionary Forces. For gallantry in action over Essey, France, August 25, 1918. Lieutenant Lynd with Lieutenant Walter M. Jagoe, pilot, while on a mission to photograph the enemy line from Montsee to Vieville-en-Haye, with two protection planes, was pursued by an enemy formation of seven pursuit planes. One of the protection planes was seen to be in difficulty, the controls being damaged and the observer having been seriously wounded. Going to the assistance of this plane Lieutenant Lynd and his pilot succeeded in driving off the enemy, although the injured plane crashed behind our lines. His mission not being completed, Lieutenant Lynd returned to the field, secured new photographic plates and with one protection plane again endeavored to fulfill his mission. On arriving over the lines he was met by an enemy patrol of five pursuit planes and driven back over the allied lines three times, when not having sufficient gas to continue, he was forced to return. Securing another plane and pilot, Lieutenant Lynd endeavored the third time to complete this mission, but after obtaining the necessary altitude, it was too late in the day to properly photograph the terrain."

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LIEUT. COLONEL DONALD P. MUSE

Lieut. Colonel Donald P. Muse, Air Corps, now on duty at Barksdale Field, Shreveport, La., was born at Jonesboro, Ark., July 29, 1891. After graduating from Junction City, Ark., high school in 1908, and from the Ouachita College, Arkadelphia, Ark., in 1912 (B.A. and B.S. degrees), he attended Eastman College, Poughkeepsie, N.Y., for one term, specializing in accounting. Joining the 1st Arkansas Infantry, National Guard, he was commissioned a second lieutenant on June 3, 1913, and promoted to first lieutenant on March 12, 1914. He was connected with a mercantile establishment at Junction City until June, 1916, when his regiment was mustered into the Federal service and ordered to station at Deming, New Mexico, for border patrol duty. This regiment was mustered out of the Federal service on February 22, 1917, but was mustered in again on April 1, 1917, and its designation subsequently changed to the 153rd Infantry.

Ordered to Hazelhurst Field, Mineola, L.I., for flying training, Colonel Muse completed his tests for the rating of Reserve Military Aviator on September 26, 1917, and remained at that station as flying instructor until December 15, 1917. He was then ordered to Gerstner Field, Lake Charles, La., and assigned to the school for flying instructors. On February 6, 1918, he was ordered to Kelly Field, Texas, where he served as a flying instructor to April 26, 1918. He next served in the same capacity at Barron Field, Fort Worth, Texas, also as Officer in Charge of the Cross-Country Stage and Commandant of the Cadet Detachment until October 4, 1918, when he was transferred to Ellington Field, Houston, Texas. During the period from June 1 to 20, 1918, he was on detached service at Taliaferro Field, Hicks, Texas, taking a course in aerial gunnery.

At Ellington Field, Col. Muse performed various duties, including those of Post Exchange Officer and Instructor in Garrison School for Officers, until July 23, 1919, when he assumed command of the 20th Aero Squadron. He was transferred to Kelly Field, Texas, September 25, 1919, and assigned as Commanding Officer of the Headquarters Detachment, 1st Day Bombardment Group, and Adjutant of this Group. In December, 1919, he commanded the 12th Aero Squadron, and on January 1, 1920, assumed command of the 96th Aero Squadron for a period of three months. He was on duty with the 96th Squadron until June 19, 1920, and was then placed in command of the 11th Aero Squadron.

Transferred to McCook Field, Dayton, Ohio, Colonel Muse began the one-year course of instruction at the Engineering School at that post on November 1, 1920, and then remained after graduation on duty in the Armament Section of the Engineering Division until March 13th, 1923. From the latter date until the latter part of August, 1923, he commanded Grissard Field, Cincinnati, Ohio, and was on duty with the 100th Division, Organized Reserves.

At his next station, Luke Field, Hawaiian Department, Colonel Muse was Post Executive Officer and Commanding Officer of the 65th Service Squadron, holding the last named position until December 1, 1923. On April 8, 1924, he again assumed command of the 65th Service Squadron, and he functioned in this capacity until May 9, 1925, when he was assigned as Adjutant of the 23rd Bombardment Squadron, also as Operations Officer and Group Supply Officer, 5th Composite Group.

Upon the completion of his tour of service in Hawaii, February 5, 1926, he was assigned to station at Bolling Field, D.C., and was in command of the 56th Service Squadron from May 17, 1926, to the following September; Assistant Engineering Officer to March 4, 1927; Commanding Officer of the 56th Service Squadron from November 12, 1926, to April 29, 1927; Squadron Supply Officer, from January 14 to April 29, 1927; Assistant Air Corps Supply Officer, April 29 to June 10, 1927, and Air Corps Supply Officer to October 24, 1927. During the remaining portion of his tour of duty at Bolling Field, to October 17, 1928, he served as Adjutant of the Field and Commanding Officer of the 18th Headquarters Squadron.

Transferred to Maxwell Field, Ala., Colonel Muse was assigned as Officer in Charge of Flying and as Post and Squadron Inspector. On March 25, 1929, he took over command of the 22nd Observation Squadron in addition to his other duties. Relieved as Officer in Charge of Flying, July 6, 1929, he was appointed Executive Officer. At various times he temporarily commanded the post for short periods. He commanded the 54th School Squadron from July 15 until the middle of September, 1931, and was then assigned to duty as student at the Air Corps Tactical School.

Shortly following his graduation from the Tactical School, Colonel Muse was transferred to Crissy Field, Presidio of San Francisco, Calif., being attached to the 91st Observation Squadron on September 8, 1932. At various times he temporarily commanded the Squadron and the post, in addition to serving as Executive Officer. He assumed command of Crissy Field and the 91st Observation Squadron in June, 1933, and from August 4, 1934, he performed the additional duties of Air Officer of the 9th Corps Area.

In April, 1935, Colonel Muse was ordered to duty in Panama, and during the course of his two-year tour there he was on duty as Executive and Operations Officer of the 19th Composite Wing at Albrook Field, Canal Zone, for the most part. In May, 1937, upon the expiration of his tour of service in Panama, he was assigned to Barksdale Field, Shreveport, La., for station.

Colonel Muse was commissioned in the Air Service, Regular Army, as a 1st Lieutenant, September 16, 1920, with rank from July 1, 1920. He was promoted to Captain with the same date of rank; to Major, October 1, 1931, and to Lieut. Colonel (temporary) September 26, 1935.

BAT FINDS REFUGE IN AIRPLANE COCKPIT

Army airplanes have carried many strange animals in the past, but none so strange as the one found recently in a Northrop A-17 Attack plane belonging to Headquarters and Headquarters Squadron of the General Headquarters Air Force. The airplane, piloted by Colonel Walter G. Kilner, Air Corps, had just returned from a navigation flight to Spartanburg, S.C.

Sergeant Ralph A. Miner was cleaning it up a bit, getting it ready for the next day's flying, when he found, hanging to the machine gun release cable, and of all things, a bat! It was a peculiar appearing creature, not at all like the chiropterous mammal, in that it was brown instead of the conventional color - black.

The bat showed a rather pugnacious spirit when it was picked up by one of the men comprising the crew of the plane, for it reared back and looked as if it were willing to take on all comers. It was finally released, however, and took refuge in the hangar, there to await nightfall, when it could more readily navigate and possibly find the correct air lane to its home station.

"At last accounts," says the News Letter Correspondent, "it had disappeared from the hangar. No PX has yet been received from Spartanburg.

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MAJOR MOON TO GO ON RETIRED LIST

Special Orders of the War Department, recently issued, relieves Major Odas Moon, Air Corps, from assignment and duty at Langley Field, Va., October 10, 1937, and directs him to proceed to his home to await retirement.

Major Moon, who is to retire for disability incident to the service, has been a member of the Air Corps since the World War. He was born February 11, 1892, at Cullman, Alabama, and attended Baylor Academy for two years and Baylor University, Waco, Texas, for a similar period. On October 13, 1917, he enlisted as a Private, 1st Class, Aviation Section, Signal Enlisted Reserve Corps. After completing the ground school course at the School of Military Aeronautics, University of Texas, Austin, February 9, 1918, and his flying training at Kelly Field, Texas, May 16, 1918, he was commissioned a second lieutenant in the Air Service, and assigned to active duty at Kelly Field. He attended the School for Flying Instructors at that field and then served as flying instructor until August 8, 1918, when he was transferred to Love Field, Dallas, Texas., where he continued duty as flying instructor.

Prior to his appointment as a second lieutenant in the Air Service, Regular

(Continued on Page 20)

A LETTER TO A RETIRED FLIGHT SURGEON

The following letter, given by Lieut. Colonel T. S. Voss, Air Corps, Commanding Officer of Nichols Field, Rizal, P.I., to Lieut. Colonel F.C. Venn, Medical Corps, upon his departure from the Philippine Department last July, needs little amplification. The letter was delivered in a sealed envelope with instructions to be opened September 30th, 1937.

Lieutenant Colonel F.C. Venn,
United States Army.

My dear Colonel Venn:

Today you are being retired from the service of the United States, due to physical disabilities incurred in line of duty, after completing more than twenty years' service as a Medical Officer in the United States Army. Many years of this service have been spent as a Flight Surgeon with the Army Air Corps. While on this duty you not only endeared yourself to the personnel of the Air Corps by the manner in which you performed your official duties, but your congenial personality and all round good fellowship will be long remembered by the hundreds of friends you made while on such duty, and I know that they, thru me, the commanding officer of the post where you last served, want to wish you all happiness in your well deserved retirement and to express to you their thanks for your untiring service to them while serving with them.

I cannot but feel that a part of your great popularity as a Flight Surgeon and as an officer in the Army is due to the fact you have been blessed with a wife one finds only in a million. The fine qualities she has exhibited will remain an example to younger ladies coming into the service and a source of great pleasure to the older ones who were privileged to know her.

Again expressing my gratitude to you both as an officer and as a friend and inviting you to remember that on this day we will drink a Scotch and Water to you and Dorothy and say,

Mabuhay,
T.S. Voss,
Lieutenant Colonel, Air Corps,
Commanding

"We hope, and feel sure," says the Nichols Field Correspondent, "that this little item will come to the attention of Colonel and Mrs. Venn, that they may know that we at Nichols Field are still thinking fondly of them and wishing them the best of everything for many, many more happy years, as we know their friends throughout the world are doing."

TOADS VERSUS BLACK WIDOW SPIDERS

Crates of huge toads consigned to a camp in Hawaii for the purpose of wiping out a thriving and thickly populated colony of black widow spiders recently constituted the unique cargo of an Army Transport plane in the Hawaiian Department.

Declaring that the 23rd Bombardment Squadron had been called upon to do many varied and unusual missions at one time or another, the News Letter Correspondent from Luke Field, T.H., adds:

"It seems that as time goes on, these missions become stranger and stranger. A few years ago, squadron pilots and bombers were called upon to bomb the lava flow of Mauna Loa in order to attempt to divert or stop the flow which was endangering the town of Hilo, Hawaii. While all the natives of the region believed that everlasting doom would fall on any one rash enough to attempt to prevent 'Madam Pele' from carrying out her designs, the mission was successful and the flow of lava was stopped. To the great surprise of many, 'Madam Pele' didn't seem to resent this intrusion into her domain and the squadron has carried on without any trouble from that source.

The Squadron recently completed another mission which could hardly be included in our line of work. A telephone call from the Group Operations Officer made the Squadron Operations Officer shake his head and wonder, but promptly at 7:45 a.m., Major Beaton, pilot, and Lieut. Capp, co-pilot, took off on an inter-island flight to South Cape, Hawaii, in the Douglas C-33, its cargo consisting mainly of crates of huge toads prevalent in these parts. It seems that the first camp established at South Cape this year proved to be a gathering place for millions of black widow spiders. The hardy pioneers stuck it out for their required week, but returned to Luke Field a tired lot, claiming that if they took a chance and dared sleep the spiders would take complete control. We hope that after the toads make themselves at home that the spiders will cease to exist.

As to the success of this latest mission of the 23rd, time alone will tell, but it will be some time before our Squadron Commander will carry a more unusual load in his shiny pet."

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NEW SQUADRON COMMANDERS

Major Oliver P. Gothlin, Jr., a recent graduate of the Command and General Staff School, assumed command of the 72nd Bombardment Squadron, Luke Field, following his arrival in the Hawaiian Department.

Captain Homer W. Ferguson joined and assumed command of the 50th Observation Squadron, also at Luke Field, T.H.

MORE PILOTS FOR THE ARMY AIR CORPS

Class 29-B of the Air Corps Advanced Flying School, Kelly Field, Texas, will graduate on October 6th, according to the following schedule:

8:00 a.m. Graduating Class report at Sections.
8:55 a.m. Student officers and flying cadets from the Basic Stage at Randolph Field report in front of Post Operations Office.
9:00 a.m. Graduating Class take stations in airplanes.
9:05 a.m. Graduating Class taxy out on the field.
9:10 a.m. Take-off.
9:30 a.m. Aerial Review.
9:45 a.m. Training airplanes on display in front of Operations Office.
10:25 a.m. Student Officers and Flying Cadets from Randolph Field arrive at Post Theatre.
10:30 a.m. Graduating Class arrives at Theatre.
10:45 a.m. Graduation Exercises at Theatre.

The graduating class of October 6, 1937, comprises 40 officers of the Regular Army and 49 Flying Cadets, total 89. Of the 40 officers, one, Major Lester T. Miller, Air Corps, heretofore a member of the Lighter-than-Air Branch, annexes the additional flying rating of "Airplane Pilot," to go with three already held by him, namely, "Airplane Observer," "Balloon Observer" and "Airship Pilot." One officer, 2nd Lieut. Carl M. Parks, Infantry, is a member of the 1935 graduating class of the United States Military Academy. The remaining 38 officers graduated from the Military Academy in June, 1936, and constitute 60 percent of the 63 members of that class who were assigned to the Air Corps for flying training. Of the 25 who failed to graduate, 18 were relieved from further training during the course of the year and the remainder are being held over for further training, due to time lost through illness or other causes.

A total of 102 Flying Cadets started training at the Primary Flying School, Randolph Field, Texas, in October, 1936, of which number 49, as above stated, or 48%, are graduating. Five Cadets of the original number are being held over for further training.

The officer graduates will, in the very near future, be transferred to the Army Air Corps and thus augment the present commissioned flying personnel of this branch of the service. The Flying Cadet graduates who, as well as the commissioned graduates, will be given the rating of "Airplane Pilot," will be commissioned second lieutenants in the Air Reserve and will be placed on extended active duty with Air Corps tactical squadrons on October 7th. The graduates are listed below, as follows:

OFFICERS

Major Lester T. Miller, A.C.	Ohio

2nd Lieutenants

Arnold, John K., Jr. CAC	Washington, D.C.
Barrett, Wallace C. Inf.	Port Arthur, Texas
Bartella, John M., Inf.	Escanaba, Mich
Bell, Frederick, CAC	Troy, Kans.
Bowen, Carl K., Jr. FA	Claremont, N. H.
Burke, Edward L.P., Inf.	Helena, Mont.
Carmichael, Richard H., FA	Austin, Texas
Champion, George P., Inf.	Marion, Ill.
Clark, Albert P., Jr. Cav.	Fort Logan, Colo.
Combs, Cecil E., Cav.	Dallas, Texas
Covington, Wm. E., Jr. Inf.	Rockingham, N.C.
Ellert, Laurence J., Inf.	Beechurst, L.I., N.Y.
Gapen, Robert D., FA	Grand Marais, Minn.
Gillespie, Frank W., CAC	Gaines, Mich.
Goldenberg, Carl T., Inf.	Sweet Briar, Va.
Grohs, William R., Cav.	St. Paul, Minn.
Holmes, Ernest S., Jr. Inf.	Missoula, Mont.
Hosmer, Clark L., Inf.	Dunseith, N.D.
Hulse, Seward W., Jr., FA	Fort Mason, Calif.
Jones, William W., Inf.	Perry, Okla.
Kelly, John R., Inf.	Chicago, Ill.
Kieffer, Pierre V., Jr., CE	Del.
Kimball, William L., Inf.	Denver, Colo.
Lee, William G., Jr., Inf.	Washington, D.C.
McBee, William M., Inf.	Eureka Springs, Ark.
McCorkle, Charles M., FA	Newton, N.C.
Monteith, Dwight O., CE	Centerville, Iowa
Nazarro, Joseph J., Inf.	Brooklyn, N.Y.
Necrason, Conrad F., SC	Cooperstown, N.Y.
Parks, Carl M., Inf.	N.C.
Rogers, Turner C., Inf.	Statesville, N. C.
Rutledge, Jay D., Jr., FA	Red Lion, Pa.
Shores, Von Roy, Jr., Inf.	Ardmore, Okla.
Spencer, Norman C., Jr., FA	Concord, Mass.
Stewart, Charles B., CAC	Mass.
Terrell, Frederick R., FA	Tujunga, Calif.
True, Clinton U., Inf.	New Orleans, La.
Twaddell, James W., Jr., Cav.	Andalusia, Pa.
Vincent, Clinton D., FA	Natchez, Miss.

FLYING CADETS

Agan, Arthur G., Jr.	Corpus Christi, Texas
Baker, James B.	Bird Island, Minn.
Barrett, Everett R.	St. Cloud, Minn.
Black, Francis J., Jr.	Tallahassee, Fla.
Bleasdale, Jack W.	Palo Clto, Calif.
Caldwell, Robert M.	Madison, Wis.
Callaway, Richard D.	Washington, Ga.
Carlson, Arthur C., Jr.	Jerome, Ariz.
Carr, Richard P.	San Antonio, Texas
Daniel, William A.	Birmingham, Ala.
Dyess, William E.	Albany, Texas
Elder, William E.	Wichita, Kans.
Ewing, Willard G.	Chicago, Ill.
Field, Charles W.	Rocky Face, Ga.
Fletcher, Eugene B.	San Diego, Calif.
Gallagher, Francis B.	El Paso, Texas
Grogan, Charles E.	Indianapolis, Ind.
Harper, Carl	Lubbock, Texas
Hatch, Edwin H.	Lisle, Ill.
Heath, Victor M.	Fond du Lac, Wis.
Heflin Clifford J.	Fresno, Calif.
Hinton, Coleman	Lakeland, Fla.
Hughes, Jack W.	St. Joseph, Mo.
Lowery, Herman F.	Hattiesburg, Miss.
McNickle, Marvin L.	Vermillion, S.D.
Maddux, Sam, Jr.	Lawton, Okla.
Miller, Warren M.	Rockford, Ill.
Miller, Wilbur G.	Livingston, Mont.
Mills, Frederic W.	Ponca City, Okla.
Olmsted, Charles T.	Brownsville, Texas

Paul, Joseph H.	Marriottsville, Pa.
Pelham, Morris	Auburn, Ala.
Peterson, Arman	Flagstaff, Ariz.
Randall, Clifford	Pasadena, Calif.
Rindom, Frank O., Jr.	Liberal, Kans.
Rogers, Floyd W.	Chicago, Ill.
Schoephoester, Melvin W.	Madison, Wis.
Sutterlin, Frederick J.	Miami Springs, Fla.
Tacon, Avelin P., Jr.	Mobile, Ala.
Taylor, J. Francis, Jr.	Columbus, Ind.
Torrey, Alfred J.	Nashville, Tenn.
Truitt, Homer M.	Booneville, Mo.
Tyler, Kermit A.	Berkeley, Calif.
Voorhees, Burton K.	Evanston, Ill.
Warren, Roy E.	Hagerstown, Md.
Wilhelm, Don Louis, Jr.	Dayton, Ohio
Wurzbach, Clemens K.	San Antonio, Tex.
Young, Charles H.	Wellington, Kans.
Younkin, William L.	Summerfield, Kans.

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ADDITIONS TO INCOMING CLASS AT RANDOLPH FIELD

In the article in the previous issue of the Air Corps News Letter on the new class at the Primary Flying School, which will begin training on October 15th next, it was stated that the students will number approximately 216, comprising 106 second lieutenants of the Regular Army who graduated from the U.S. Military Academy on June 12th, last, 103 candidates from civil life, four enlisted men of the Air Corps and three enlisted men from other branches of the Regular Army. It was predicted, however, that the number of flying cadet appointees would be augmented to some extent before the new class actually started training.

Since the date of the previous issue of the News Letter, 49 additional cadets were added to the list, comprising 45 civilians and 4 Air Corps enlisted men. At the same time, 8 candidates selected for appointment, and whose names appeared in the original list, declined to accept same. Thus, there is a net gain of 41 Flying Cadets for the new class, raising their total to 151 and the total for the entire class to 257, (adding the 106 officers).

The eight candidates removed from the original list are -

Hornsby, Claude Eugene, Jr.	Centerville, Ala.
Murray, Samuel Fenton	Palo Clto, Calif.
Giesecke, Paul	Rockville, Conn.
Bourgoin, Raoul Joseph	Frenchville, Maine
Travis, Frank Hotchkiss	Tarrytown, N.Y.
Reynolds, Thomas C., Jr.	Valliant, Okla.
Smith, Charles John	Rutland, Vt.
Reed, Charles Wesley	Raymond, Wash.

The 49 additional candidates recommended for Flying Cadet appointments are listed below, as follows:

CIVILIANS

DeShazo, Robert V.	Birmingham, Ala.
Fitzgerald, Maurice Joseph, Jr.	Ft. Smith, Ark.
Wade, Horace Milton	Magnolia, Ark.
McGowan, Leland Stanford	Alhambra, Calif.
Hopper, Rowland Wells	Fresno, Calif.
Eisenhart, Charles Marion	Los Angeles, Calif.
Greenhalgh, Leo Joseph	Los Angeles, Calif.
Lawrence, Reesor Mott	Redding, Calif.
Flack, Rudolph Emil	West Los Angeles, Calif.
Toliver, R. Frederick	Fort Collins, Colo.
Starkey, James Fred	Greeley, Colo.
Wheeler, Warren Ned	Greeley, Colo.
Greasley, Phillip Henry	West Hartford, Conn.
Sheahin, John Thomas	Washington, D.C.
Shilling, Erikson E.	Washington, D.C.
Schwartz, Paul	Tampa, Fla.
Proctor, John Peebles	Athens, Ga.
Baugher, John Oliver	Chicago, Ill.
Floyd, Albert	Chicago, Ill.
Salzarulo, Raymond Paul	Richmond, Ind.
Nichols, Thomas Brooks	Lexington, Ky.
Hamilton, McHenry	Alexandria, La.
Merritt, James Franklin, Jr.	Benton, La.
Smart, Robert Alan	Kittery, Me.
Bane, John Charles	Bethesda, Md.
Osborn, John William	Lincoln, Neb.
Hutchins, Leroy Gage	Dover, N.H.
Milligan, Robert Louis	Rochester, N.H.
Ward, Brewster	Buffalo, N.Y.
Wiper, Samuel B.	Sheldon, N.D.
Criqui, Francis Bernard	Toledo, Ohio
Millsaps, James Carter	Kiowa, Okla.
Sullivan, Wm. Alexander, Jr.	Aspinwall, Pa.
Sullivan, John Lynn	Scranton, Pa.
Teats, Edward Charles	Sharpsburg, Pa.
Borsi, Lawrence Renzo	West Wyoming, Pa.
Wyatt, Thomas Cleveland, Jr.	Knoxville, Tenn.
Baskin, Robert W.	Murfreesboro, Tenn.
Free, Edward Gorman	Nashville, Tenn.
Knox, John Max	Nashville, Tenn.
Taylor, Ozburn Early	Nashville, Tenn.
Howery, Allen Moore	Russellville, Tenn.
Barksdale, Ralph A.	Gainesville, Texas
Flowers, Noel Quentin	Mount Vernon, Wash.
Martin, Robert James	Eau Claire, Wis.

ENLISTED MEN

Green, Benjamin Clyde, Pvt. Perry, Fla.
Panama Air Depot, France Field, Panama.
Welborn, Kenneth M. Sgt. Auburn, Ky.
13th Air Base Sqd., Maxwell Field, Ala.
Keyser, Donald McKay, Pvt. McComb, Ohio
Hq. and Hq. Squadron, Chanute Field, Ill.
Gaydos, John, Pvt. Jamestown, Pa.
14th Air Base Squadron, Bolling Field, D.C.

In the revised list of Flying Cadet appointees California, with 16 students, still has the largest representation of native sons, followed by Texas with eleven and Oklahoma with eight. Los Angeles leads the cities represented with four students, followed by Washington, D.C., and Nashville, Tenn., with three each.

It is quite likely that there will be further additions to the list of Flying Cadet appointees before the new class starts work in earnest.

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A NEW RANGE FOR THE 37TH ATTACK SQUADRON

To date there has never been a local attack range available for the 37th Attack Squadron of Langley Field, Va. Construction of the much needed range has at last begun at Mulberry Island, 22 miles northwest of Langley Field, and the 37th is looking forward to being able to qualify its flying personnel. Lieut. James M. Jones, Air Reserve, Armament Officer of the Squadron, is working on the project and contemplates range control by a system of flags and by a sub radio station erected on the range.

MINIATURE BOMBING RANGE AT ADVANCED FLYING SCHOOL

The Kelly Field miniature bombing range, a photograph of which appears on the cover page of this issue of the News Letter, is said to be the only one of its kind in the world, and it is now being used by flying students in bombing practice. It is here that they receive their first training in air artillery adjustment and infantry missions.

Standing 84 feet high and 45 feet in diameter, the building from the outside resembles somewhat a modernistic farm silo or grain elevator. Its walls are fire-proof and sound-proof.

Climbing several flights of stairs, one reaches the observers' balconies, which circle the building, and the instructor's platform suspended from the top. From these balconies the observers look down below on the terrain board, or the miniature range.

The terrain suggests an airplane view of San Antonio and its various military posts, with a criscross of roads and streets. This board, which covers the entire ground floor, is perforated with 600 holes. Small lights are underneath the holes.

The bombing student does not drop a missle, but scores his hits with a system of lights and a radio hook-up. The radio operator sits before a large switch panel and operates the lights as directed by the student who theoretically is firing from the balcony. Each student is aided with a chart, and his strike is represented by a light which appears on the board below. The circular observation balconies will accommodate 100 students at a time.

Looking from the top of the tower, the artificial terrain has the same appearance San Antonio would have if viewed from 15,000 feet.

The range constitutes the first step in bombing practice of the students.

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Retirement of Major Odas Moon

(Continued from Page 16)

Army, on July 1, 1920, Major Moon was on border patrol duty at Marfa, Texas, with Flight B, 104th Aero Squadron. He was transferred to the Panama Canal Department, February 20, 1921, and served on the Isthmus for three years, being stationed at France Field, and performing during this period at various times duty as Post E. & R. Officer, Post Survey Officer, Athletic Officer, Engineering Officer and Adjutant.

At Kelly Field, Texas, his next station, where he was on duty for 4½ years, he served as Flying Instructor for over three years and, in addition, was Director of Bombardment Training at the Advanced Flying School for two years. He also completed the 5-months' Special Observation course.

Transferred to Rockwell Field, Calif., August 17, 1928, where he was on duty until June 25, 1930, Major Moon served for the most part in the capacity of Operations Officer. For a period of five months he was on detached service at Wright Field, being a student at the Air Navigation School.

After graduating from the one-year course at the Air Corps Tactical School, Langley Field, Va., in July, 1931, he returned to Kelly Field where, during a two-year tour of service, he was on duty for the most part as Bombardment Flying Instructor. In July, 1933, he was transferred to the Air Corps Tactical School at Maxwell Field, Ala., where for 2½ years he was on duty as an instructor, and for nearly a year Chief of the Bombardment Section.

Major Moon was transferred to his present station, Langley Field, in July, 1936.

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CHANGES OF STATION OF AIR CORPS OFFICERS

To Chanute Field, Ill.: Captain Norme D. Frost, from Selfridge Field, Mich.

To Washington, D.C.: Captain William J. McKiernan, Jr., from duty as Instructor, 44th Division Aviation, New Jersey National Guard, Newark, to duty in the Office of the Chief of the Air Corps.

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RESERVE OFFICERS PLACED ON EXTENDED ACTIVE DUTY

Second Lieutenants

Randolph Field, Texas: Edward Preston Dimmick, San Antonio, Texas, to September 13, 1940; Hans Kraft Kircher, Los Angeles, Calif.; Robert Hamilton Monroe, Los Angeles, Calif.; Robert Harry Quigley, Whiting, Ind.; Charles Alexander Watt, Detroit, Mich.; Walker Arval Hazelwood, Salem, Oregon; Joseph Roy Delaune, Jr., Beaumont, Texas, to September 21, 1940; Vernon Lester Phelps, Jennings, La., and Charles Ernest Trostel, Cincinnati, Ohio, to September 19, 1940; Anthony Gerard Hunter, Kansas City, Mo., to September 25, 1940; Eckford Hodgson, Gallipolis, Ohio, to September 25, 1940; Robert Wilbur Henderson, Glendale, Calif., and George Samuel Pello, Seattle, Wash., to October 1, 1940; Norton Harding Van Sicklen, III, Mansfield, Ohio, to October 9, 1940.

Lawson Field, Ga.: James Edward Darby, Chicago, Ill., to September 26, 1940.

March Field, Calif.: Roger Williams Smith, San Francisco, Calif., and James Clifford Jensen, Fresno, Calif., to September 21, 1940.

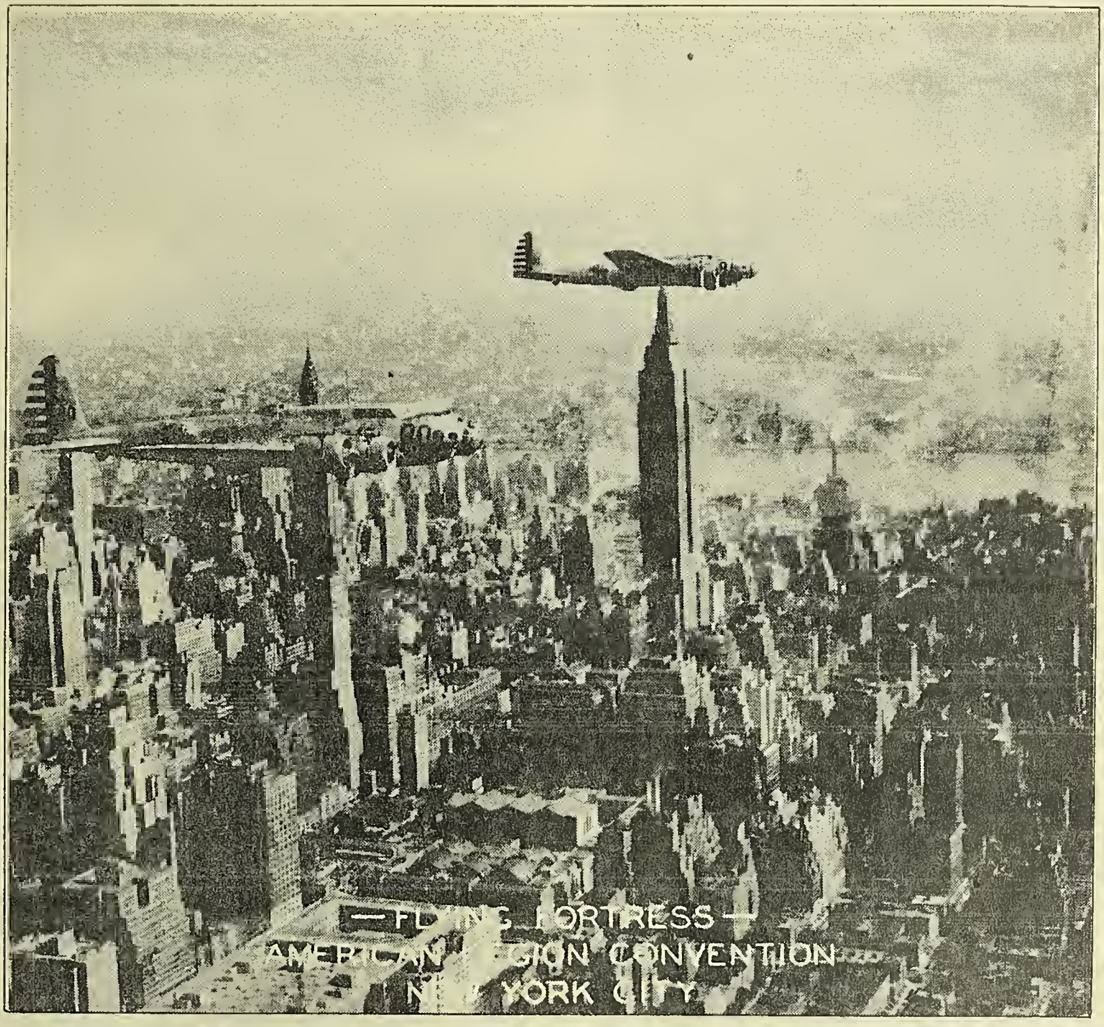
Rockwell Air Depot, Calif.: Harry Lewis Dulin, Oakland, Calif., to September 21, 1940.

Langley Field, Va.: James Britt League, Greenville, S.C., to September 12, 1940.

Effective upon the completion of their present tour of foreign service, Major Harvey W. Prosser, Captain Shelton E. Prudhomme, 1st Lieuts. Richard A. Legg and Francis M. Zeigler, now in the Philippines, and 1st Lieut. John M. Price, now in the Panama Canal Department, are assigned to duty at Randolph Field, Texas.

Major Hugh Mitchell, Signal Corps, has been relieved from assignment and duty at Fort Monmouth, New Jersey, and assigned to duty as Director of the Aircraft Radio Laboratory at Wright Field, Dayton, Ohio. Major Mitchell succeeds the recently appointed Chief Signal Officer of the Army, Major General J.O. Mauborgne, who, as Colonel, Signal Corps, held that position for the past year.

AIR CORPS
NEWS LETTER



—FLYING FORTRESS—
AMERICAN LEGION CONVENTION
NEW YORK CITY

ISSUED BY
THE OFFICE OF THE CHIEF OF THE AIR CORPS
WAR DEPARTMENT
WASHINGTON

VOL. XX OCTOBER 15, 1937 NO. 20

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Information Division
Air Corps
October 15, 1937
Munitions Building
Washington, D.C.

The chief purpose of this publication is to distribute information on aeronautics to the flying personnel in the Regular Army, Reserve Corps, National Guard, and others connected with aviation.

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ECHOES FROM THE AMERICAN LEGION CONVENTION

PARTICIPATION BY THE THIRD WING

By the Barksdale Field Correspondent

The high light of the National American Legion Convention, held in New York City, September 20-23, 1937, was the GHQ Air Force participation on Tuesday, September 21st, involving the Second Wing, Langley Field, Va., and the Third Wing, Barksdale Field, La.

Composing the Second Wing were the 2nd Bombardment Group, consisting of four B-17 Bombers; the 8th Pursuit Group, consisting of eighteen Consolidated P-B2 Pursuit Bombers, and the 1st Pursuit Group, consisting of eighteen P-26 Pursuit planes from Selfridge Field, Mich. Mitchel Field, Long Island, was represented by the 9th Bombardment Group, consisting of B-10 Bombers.

The Third Wing was represented by the 3rd Attack Group, consisting of the 13th and 90th Attack Squadrons, each equipped with eighteen A-17A Attack planes, the total personnel numbering 36 officers and 36 enlisted men, under the command of Major P.L. Williams.

At 6:00 a.m., Sunday, September 19th, the 13th Attack Squadron, under the command of 1st Lieut. R.H. Lee, departed from Barksdale Field for New York, via Atlanta, Ga. Staying overnight at Bolling Field, D.C., the Squadron arrived at Mitchel Field, N.Y., on Monday morning. The 90th Attack Squadron, leaving Barksdale Field shortly after the the departure of the 13th Attack, followed a route via Maxwell Field, Ala., and Pope Field, N.C., staying overnight at Langley Field, Va., and arriving at Mitchel Field on Monday morning.

Quarters were assigned shortly following arrival at Mitchel Field and instructions relative to operations on the following day were received. A cordial welcome was extended by Mitchel Field officers, many of the visiting officers being their guests while there.

Being free until 10:00 o'clock the following morning, many of the officers took advantage of the opportunity to become better acquainted with everything in general. This was to prove very interesting to many, as the majority of the Barksdale Field officers are from the West and the South, not yet contaminated by the affliction of speech, or what have you, which besets so many in a city as far north and as cosmopolitan as Manhattan and its adjoining districts.

Those of us who were fortunate, or unfortunate enough, as the case may be, to get into town, found the American Legion at play and, true to their traditions, were in complete charge of the city - a place where anything can happen and everything does happen, especially on such an occasion as this. Civic orders, rules and regulations seemed to have vanished completely, but everything was done in a good natured way. Everything except the spirit of the occasion was forgotten. It was contagious and was to be reflected in the demonstrations as we flew them the next day.

On Tuesday, September 21st, the first demonstration was scheduled to take place over New York City at 12:00 noon. The Third Attack Group led the formation, taking off at 11:10 a.m., followed by the 9th Bombardment Group, the 8th Pursuit Group, the 1st Pursuit Group and the 2nd Bombardment Group in the order named. The positions of the units in the formation were the same as the order of the take-off.

The Initial Point being Miller Field, Staten Island, at "H" hour less five minutes, the leading squadron, the 90th Attack, reached that point at 11:55 a.m. A minimum altitude of 2,000 feet was maintained throughout the flight.

Three passes were made over the city, the first being in column of squadrons, from the Battery along Fifth Avenue to the upper end of Central Park; the second in column of flights from the Battery along Fifth Avenue to Mount Vernon, and the third in a column of flights from Mount Vernon to Central Park, along Fifth Avenue to the Battery. On the last pass, the B-17 Bombers were given the throttle and they quickly passed over the remainder of the flights. After the second pass, the 8th Pursuit Group left the column at Mount Vernon and followed the B-17 Bombers to Central Park, where a special demonstration was given after the B-17's had left the immediate vicinity.

For the second parade formation, the Third Attack Group took off at 4:25 p.m., C.S.T., followed by the remaining units in the same order as the first demonstration. This demonstration was scheduled to take place at 5:15 p.m., differing from the previous parade in that the formation was in column of elements.

The route for the daylight flights was as follows: Mitchel Field, Valley Stream, Long Beach, Babylon, Huntington, Mineola, Miller Field, Battery, up Fifth Avenue to the upper end of Central Park, down the Hudson River to the Battery, up Fifth Avenue to Mount Vernon, Mount Vernon to Central Park, down Fifth Avenue to the Battery, Mitchel Field.

Led by the 3rd Attack Group, consisting of 36 A-17A Army Attack planes, flying in formation at 2,000 feet, the sun reflecting from their wings in bright flashes, the entire formation made an impressive sight to the thousands below. The sight of the planes from Barksdale Field, led by Major Williams, flying in wide sweeping turns around the Statue of Liberty, up Fifth Avenue and across the Battery, followed in quick succession by the other planes, was one that even impressed the pilots as they looked back across their wings. It was one of the largest aerial demonstrations that New York had ever seen and one that will not soon be forgotten.

Following the satisfactory completion of the daylight missions, the scheduled time was awaited for the night demonstration. The Third Attack Group took off at 10:35 p.m., followed, as in previous demonstrations, by the other Groups, except the First Pursuit, which did not participate in the night flight, and passed over the city in a column of elements at 11:15 p.m. The Barksdale Field Group flew with their formation lights on, making the planes more visible to the spectators. The procedure of this formation closely followed that of the daylight demonstrations.

As the planes passed over Fifth Avenue, 900,000,000 candlepower searchlight batteries of the 62nd Coast Artillery Anti-Aircraft Regiment at Fort Totten, N.Y., sent piercing beams of light toward the sky. Upon the completion of this, the last demonstration, the planes returned to Mitchel Field, landing by elements at approximately 12:10 a.m.

The Barksdale officers accepted without protest the news that the Group would not return to Barksdale Field until Thursday morning. On that day the departure from Mitchel Field was at 10:00 a.m., the 13th and 90th Attack Squadrons following their respective routes, both remaining at Maxwell Field overnight.

Shortly after the Group had effected a landing at Maxwell Field, the group of men walking towards the Operations Office would have caught anyone's eye. Members of the 13th Squadron, an impressive group to say the least, were burdened as it were with their "swagger sticks" acquired at Mitchel Field under questionable authority, and with the unescapable influence of the "big city" upon them. In spite of an air of superiority, etc., there was preserved a high degree of modesty and dignity, forming an impregnable defense against any criticism.

At 10:30 a.m., Friday, September 24th, the Third Attack Group landed at Barksdale Field, all planes and men intact, apparently in first class condition, again demonstrating the ability and efficiency with which this Group performs a mission, where and whenever it might be called upon to do so.

PARTICIPATION BY THE SECOND WING

By the News Letter Correspondent

In a crowd estimated at two and one-half to three million people, every spectator occupied a reserved seat when the Second Wing, GHQ Air Force, paraded against New York's skyline during the American Legion activities on Tuesday, September 21st. Thousands who had purchased peach baskets at four bits apiece, in order to get a better view of the ground parade through the maze of heads lining the sidewalks of the city's famous avenue, swayed dangerously on their rickety perches and wished to heaven they had not been so extravagent as squadron after squadron sped swiftly overhead. Legionaires, among them many World War pilots who had been out of touch with aviation since the days when their hands and feet played sweet music on the controls of Spads, Nieuports and Salmsons, were afforded an opportunity to compare the trim speedy planes of today's Air Force to the affectionately termed "crates" in which they fought the battles of twenty years ago.

The following planes, fully manned by combat crews, engaged in the Legion flight:

36 A-17A's from the 3rd Attack Group, commanded by Major P.L. Williams.
18 B-10B's from the 9th Bombardment Group, commanded by Lieut. Colonel C. W. Connell.
18 PB-2's from the 8th Pursuit Group, commanded by Captain Ned Schramm.
18 P-26's from the 1st Pursuit Group, commanded by Lieut. J.F. Egan.
6 B-17's from the 2nd Bombardment Group, commanded by Lieut. Colonel Robert Olds.

The Attack Squadrons, normally Third Wing units, were attached to the Second Wing during the Demonstration period.

On September 19th, General Brant, Commander of the Second Wing, Langley Field, and his staff, arrived at Mitchel Field, from which all operations incident to the aerial exhibition were conducted.

Throughout the following day, the air about Mitchel Field was filled with the drone of aircraft as the units from Barksdale, Selfridge and Langley Fields converged on the Long Island Base. As each unit landed, the planes were flagged to pre-designated parking areas where they were staked down for the night. Liaison officers from Mitchel Field, schooled to near perfection in the answers to "Where do we eat?" - "Where do we sleep?" - "When does the next train leave for New York?" went to work with a vengeance as the dying engines gasped their last breath of 92 octane.

Three aerial parade formations were flown on Tuesday, the 21st; the first at 12:00 noon, the second at 5:15 p.m., and the third at 11:15 p.m., Eastern Daylight Saving Time. The first and second flights were identical, the formation making three passes over the route of the ground parade. Squadrons passed by the first time in column and the last two times in column of flights. The leading element of the Attack Squadrons, which headed the flight, maintained a speed of 150 m.p.h., and an altitude of 2,000 feet. During the third pass-by, the B-17's, which brought up the rear of the column, gave the throngs on the ground an idea of the speed of our most modern Bombers by speeding up and overtaking the remainder of the formation.

During the two daylight flights, the 8th Pursuit Group pulled out of the formation after the second pass-by and remained over Manhattan to stage the string formation which created so much favorable comment at the National Air Races at Cleveland early in September. The PB-2's also formed the letters "A.L." over the scene of the parade.

The night formation differed from the daylight flights in that the squadron of P-26's did not participate. As a precautionary measure, the separate flights were spread at increased intervals.

Major General Frank M. Andrews, Commanding the GHQ Air Force, cruising in his C-32 over the city, observed the noon flight. He was accompanied by General Gerald C. Brant, Commanding the Second Wing of the GHQ Air Force. Also, during the noon flight several O-46's and a B-18 hovered over the formation to obtain photographs.

A more convincing demonstration of the excellence of modern military aircraft and of the proficiency of the Air Corps flying personnel would have been difficult to attain, for with the exception of two flat tires and a scraped wing tip the flights were totally devoid of any mishaps. Radio contact with the flying units was maintained through the Mitchel Field Control Tower, and the rapidity with which the units cleared the airdrome on take-offs and landings was due in no little degree to the efficiency of radio control.

Newspaper reports on the flight were most complimentary, one paper going so far as to say that the aerial review "stole the show." Superlative as such a statement may seem, there is a certain amount of satisfaction in knowing that a routine flight over Manhattan received so much favorable comment on a day that was jammed with eye-filling spectacles on the pavement of Fifth Avenue. The streets were filled with high stepping feminine drum majors, with floats bearing legions of feminine charmers tossing everything from snowballs to oranges into the arms of spectators. And when the spectators in the street took time out to cheer the aerial activities at a moment when there was so much pulchritude on the ground to attract them, there was reason for a little backslapping by those who were doing the flying.

All participating units, with the exception of the Attack squadrons, departed for home stations on September 22nd. The A-17's took off the following day.

Hundreds of spectators, attracted to Mitchel Field by the never ceasing drone of motors, visited the Long Island Air Base during the three days of the concentration.

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THE B-17'S IN THE AMERICAN LEGION REVIEW

Six B-17 Bombardment airplanes, led by Lieut. Colonel Robert Olds, Commanding Officer of the 2nd Bombardment Group, Langley Field, Va., participated in the American Legion Review over New York City, September 21, 1937. The Group was based at Mitchel Field, L.I., flying the last position of the 100-plane review. Flights were made over the Legion Parade on Fifth Avenue at 11:00 a.m., 5:00 p.m. and 11:00 p.m. During the 11:00 a.m. Review, the "Flying Fortresses," in column of airplanes, were "opened up" near George Washington Bridge and raced above the 94 other planes, reaching the Battery in 3½ minutes. So terrific was the wind pressure against the gian ship that the windshield over the pilot's cockpit in one of the B-17's cracked at the high speed. The windshields did not break, however, and all planes finished the three flights of about one and one-half hours' duration each without incident.

One of the highlights of the Review was the NBC hook-up on which Col. Olds broadcast while flying his B-17 over Central Park.

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The 49th Bombardment Squadron returned to its home station, Langley Field, Va., on September 18th, after completing a very successful week in the field at Virginia Beach, Va. With six days of very favorable weather in its favor, the Squadron carried out an intensive program of record gunnery. Twenty-four enlisted men, members of combat crews, qualified as expert aerial gunners, many making very creditable scores. The Squadron is proud of this week of field training in that some very valuable and necessary work was accomplished.

A LITTLE "DOPE" ON 7TH BOMBARDMENT GROUP

Just eighteen years ago, the 7th Bombardment Group, the tactical unit of Hamilton Field, was organized at Park Field, Tennessee, as the 1st Army Observation Group. Its growth, from its inception on October 1, 1919, to its present-day status has been synonymous with the growth of all aeronautical science.

During these eighteen years its mission has changed from simple observation, which at that time was considered the most important phase of aviation, to the present-day bombardment task of not only finding but destroying the enemy. Its equipment has changed from its original Keystone Bombardment airplanes (then a marvel of efficiency) to the modern, huge Douglas B-18 type, using in between during the advancing years Douglas B-7 and Martin B-10 and B-12 airplanes.

The 7th Bombardment Group served its initial phase as the 1st Army Observation Group for only two years, becoming inactive in 1921. Redesignated as the 7th Bombardment Group, it was made active at Rockwell Field on June 1, 1928. Later, on October 29, 1931, it moved to March Field and, on December 5, 1934, to its present home at Hamilton Field. On March 1, 1935, the Group became an integral part of the GHQ Air Force, which was organized on that date.

At the present time the 7th Bombardment Group is composed of Headquarters and Headquarters Squadron, 9th, 11th and 31st Bombardment Squadrons, with the 88th Reconnaissance Squadron attached. Commanded by Lieut. Colonel George E. Stratemeyer, it is currently the prime air defense of the Northwest.

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MORE "FLYING FORTRESSES" PURCHASED

The Hon. Harry H. Woodring, Secretary of War, announced on October 8th the award of a contract to the Boeing Aircraft Company, Seattle, Washington, for 13 additional B-17B multi-engined Bombardment airplanes and spare parts therefor at a total net cost of $2,518,346.83.

The planes involved in this purchase are 4-engine Bombers. The B-17B is the latest series of the B-17 type and includes minor changes which have been found advisable as a result of the service tests which have been in progress for more than a year in the 2nd Bombardment Group, Langley Field, Va., with the B-17's, popularly called the "Flying Fortress."

Each of the airplanes involved in this order is powered with four Wright "Cyclone" engines, manufactured by the Wright Aeronautical Corporation of Paterson, N.J.

These Bombers can fly at speeds in excess of 225 miles per hour, carry five machine guns and a crew of from seven to nine men, including a commanding officer, pilot, co-pilot, navigator, engineer, bomber, radio operator, and gunners. All the members of the crew can freely change stations, and for long flights sufficient additional personnel can be carried so that the operators of the airplane may be relieved from time to time.

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VALUE OF AIR TRAVEL AS A TIME SAVER

In the life of an Air Force Commander, every minute counts. The value of a speedy command plane in saving hours and even days in the working schedule of Major General Frank M. Andrews, Air Corps, commander of the General Headquarters Air Force, was vividly illustrated in his recent visit to the air demonstration which was recently held at Fort Riley, Kansas.

Departing from his home station, Langley Field, Va., at 5:50 o'clock on the morning of September 30th, he flew to Fort Riley, via Louisville, Ky., and early in the afternoon arrived at the Cavalry School in plenty of time to witness the GHQ Air Force demonstration of aerial fire power. Taking off after the demonstration was completed, General Andrews was back at Langley Field at 1:15 a.m. the next day and at his desk at the usual time.

Other personnel making the flight with him in his Douglas C-32 command plane were Brigadier General Edward M. Shinkle, Assistant Chief of the Ordnance Department at Washington; Colonel Walter G. Kilner, Operations Officer, GHQ Air Force; Lieut. Colonel Russell L. Maxwell, Ordnance Officer; Lieut. Colonel Cedric W. Lewis, Signal Officer; Major Charles C. Chauncey, Assistant Operations Officer; Lieut. Hiette S. Williams, co-pilot; Staff Sergeant Arthur S. Andrews, Crew Chief, and Private L.A.L. Craig, Radio Operator.

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33RD PURSUIT SQUADRON GOES PLACES

"The 33rd Pursuit Squadron, Langley Field, Va., has really been going places andtaking part in demonstrations and reviews," says the News Letter Correspondent, "Captain Springer, leading the regular combat flight with the 8th Pursuit Group in the American Legion Review, which included 99 modern tactical ships from Barksdale, Selfridge, Mitchel and Langley Fields. Two day flights were made and one night flight.

The Red Cross wanted a flight of planes to fly over Washington on the 25th, and again the 8th Pursuit Group got the call, with the 33rd Squadron helping to form a symbolic cross over the city of Washington. The pilots not only enjoy these

(Continued on page 5.)

NEW SHOULDER TYPE SAFETY BELT

By the Materiel Division Correspondent

With a view to preventing head injuries in forced landings and crashes, a new shoulder safety belt has been developed at the Materiel Division, Wright Field. This belt, although it may be worn slack during flight, affording all necessary freedom of body movement, can be pulled taut instantaneously in impending accident, holding the pilot's body rigid in the seat.

The shoulder belt is designed in the form of two suspender-type shoulder straps which extend over the back of the seat and are fastened to an adjusting device on the seat, while the opposite ends are brought forward and fastened in conjunction with the regular pilot's lap-type belt. By pulling the release latch on the lap-type belt, both belts are instantaneously opened, permitting the aviator to jump with his parachute if he so desires. When worn slack, the aviator may lean forward in the seat approximately 60 degrees. A single upward pull of a chain at the front of the seat places the belt in the taut position, holding the body of the flyer immovable. Since recent medical reports have indicated that a large percentage of fatalities which occur in connection with crashes or forced landings are the result of head injuries, it would seem that the belt would have an important place in modern flying equipment.

Another advantage of the shoulder belt not related to safety is its use in the taut position while the aviator is operating a stationary machine gun. Under these conditions the pilot's body would not be jarred out of position and better aiming could be obtained.

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CURTISS EXECUTIVE VISITS AIR CORPS FIELDS

Mr. Burdette S. Wright, President of the Curtiss Aeroplane Company, division of the Curtiss-Wright Corporation of Buffalo, N.Y., and formerly a Captain in the Air Corps, visited the San Antonio Air Depot, Duncan Field, Texas, recently, greeting old friends and discussing aeronautical matters with the Commanding Officer. Mr. Wright was traveling by air in a Stinson Cabin plane, and also visited the other Air Corps stations in the vicinity of San Antonio. Mr. Warren, Engineer with the Curtiss Aeroplane Company, was also a visitor at the San Antonio Air Depot, conferring on engineering matters connected with airplane construction. From San Antonio he was scheduled to proceed to Barksdale Field, La., for conference in connection with the A-18 Attack airplanes.

33rd Pursuit Squadron goes places

(Continued from Page 4).

trips and demonstrations, but from a tactical point of view these flights have tended to improve the flying of each man concerned."

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ULTRA MODERNISM AT ITS HEIGHT

The Materiel Division at Wright Field is one of the show places of Dayton, and the citizens of that community justly feel proud of the Air Corps Experimental Engineering plant at that field.

Wright Field is the Mecca of individuals connected in one way or another with aviation; also air-minded citizens whose travels take them to or through Dayton make it a special point to drive out to Wright Field.

Not long ago, one of the Wright Field guides, conducting a party of visitors around the field, paused in front of some modern type Air Corps planes parked on the line and proceeded to deliver a well rehearsed lecture regarding each of them.

"This," he said, pointing to a huge plane, particularly familiar to citizens residing in the vicinity of Langley Field, "is the B-17 Bombardment airplane popularly termed the 'Flying Fortress,' ****; this one is the Northrop A-17, which is used by the Attack Squadrons of the Air Corps*****; this little fellow here is the very fast little P-26 Pursuit plane which is flown by the First Pursuit Group at Selfridge Field, Mich., and that big fellow over there is the Douglas B-18 Bomber flown by the Bombardment Group at Hamilton Field, Calif., and --"

At this juncture there was an interruption. A little old lady at the rear of the gathering, who appeared to evince great interest in Uncle Sam's latest type combat planes, caught sight of a C-8A Fairchild Photographic plane (purchased by the Air Corps in 1931). Its appearance did not seem, in her opinion, to fit in with the modern characteristics of the new combat airplanes nearby.

"Guide!" she called out, pointing to the C-8A, "is this the airplane that was built by the Wright Brothers?"

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MORE BT-9's FOR KELLY FIELD

Four more BT-9 training airplanes were added to the equipment of the Advanced Flying School, Kelly Field, Texas, during the first week of October. The planes were ferried to their destination from Glendale, Calif., by Major W.E. Richards, 1st Lieuts. R.F.C. Vance, J.H. Bundy and Troup Miller.

PILOT BALLOON OBSERVATION IN HAWAII

By Lieut. Harold L. Maddux, A. C.

An unusually long pilot balloon observation was made recently at Wheeler Field, T.H., which constituted a record for the Air Corps Weather Station at that field. The observation started at 6:50 a.m., and was concluded at 7:46 a.m., when the balloon burst at an altitude of 33,900 feet, after having been followed by the observer for 56 minutes.

The prevalence of cumulus or scattered strato-cumulus clouds due to orographic influences at this station, ordinarily prevents pilot balloon observations of any very great length. On this occasion, however, there was present in the sky only one-tenth of strato-cumulus cloud, i.e., the canopy was only one-tenth covered. When the balloon was released, the surface wind was from the northwest with a velocity of seven miles. The horizontal projection of the balloon's flight shows that the wind direction was generally east and northeast, with a velocity between eight and twenty-one miles per hour up to 10,500 feet. Between 10,500 and 20,700 feet, the wind was northeast and north, with an average velocity of six miles per hour. At an altitude of 21,300 feet the wind direction shifted abruptly to south-south-west, with a velocity of two miles per hour, from that altitude on the wind direction was south and south-south-east, with an average velocity of six miles per hour up to 30,300 feet. Between 30,900 and 32,100 feet, the wind direction was directly west with an average velocity of six miles per hour. The last three minutes of the balloon's flight showed variable winds, shifting from south through east to north-north-east, with a velocity of two miles per hour.

The maximum horizontal distance of the balloon from point of observation was 28,470 feet at the 49th minute of the observation. The barometric pressure, reduced to sea-level, at the time of the observation was 30.07 inches, temperature 68.5 and relative humidity 84%.

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JUNIOR INSPECTOR JOBS FOR RESERVE PILOTS

Lieuts. Joe E. Barton and John L. Templeton, Air Reserve, recently terminated their active duty tour with the 49th Bombardment Squadron, Langley Field, Va., to accept positions with the Department of Commerce as Junior Inspectors.

"These two men are highly thought of by all who knew them," says the News Letter Correspondent, "and both the Squadron and the Group deply regret the loss. Our sincere wishes for good luck follow these two."

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Watch out for the next issue of the News Letter, which will be a special Air Corps Technical School number.

WEST COAST FLYERS VISIT SELFRIDGE FIELD

Speeding over the Rocky Mountains, the Great American Desert and the western plains, twenty-one brand new Northrop Attack airplanes of the 17th Attack Group roared into Michigan on the night of September 12th and took sanctuary at the Army Air Base at Selfridge Field. Led by their Group Commander, Lieut. Colonel John G. Colgan, 42 officers and enlisted men inspected the field the following day and then took to the air again and sped on their way south. The flight was made for the purpose of familiarizing members of the General Headquarters Air Force stationed on the West Coast with the facilities and operation of other Air Bases throughout the country.

Practice in moving whole squadrons and groups rapidly by air from one coast to the other, a most vital phase of air defense studies, was likewise the mission of the flight, according to Major Victor H. Strahm, Operations and Training Officer of the Group. Following the visit to Selfridge Field, stops were scheduled to be made at Dayton, Ohio; Pope Field, N.C.; Maxwell Field, Alabama, and Barksdale Field, La., before returning to the home base of the Group at March Field, Calif., some 50 miles from Los Angeles.

The airplanes with which this well known Group is now equipped are the latest in design to be delivered to the units of the GHQ Air Force. Each plane carries six machine guns, numerous small bombs, andhas streamlined special tanks for laying smoke screens. The retractable landing gear has increased the speed of these ground-strafers to nearly 200 miles per hour, and fuel has been provided for more than six hours of sustained flight.

Personnel of the 17th Attack Group participating in the flight included, in addition to Col. Colgate and Major Strahm, Majors Emil C. Kiehl, Samuel G. Frierson, Louie C. Mallory, Perry Wainer, 1st Lieuts. Donald H. Baxter, William H. Maverick, Hudson H. Upham, Thomas S. Moorman, Jr., Donald O. Vars, 2nd Lieuts. Carl Swyter, Frank R. Cook, William E. Creer, Conrad J. Herlick, Clyde Box, Henry R. Spicer, Arthur W. Kellond, Delmar E. Wilson, Donald W. Eisenhart, Ben I. Funk, John H. Turner, Wallace E. Nau, Murray A. Bywater, Tech. Sgt. H.D. Leroy, Staff Sgts. T.T. Dundore, L. Carter, C.D. White, W.M. Palmer, E.L. Higgins, L.W. Chlosta, Sgts. I.E. Howard, M.J. Martini, L. Sviechoviez, Corporal Y.A. Stranad, Privates H.K. Roberts, M.J. Auer, W.E. Brausa, H.B. Dintaman, W.C. Osburn and E. Decker.

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Fifty members of the Coast Artillery School, Fort Monroe, Va., paid a visit to the 96th Bombardment Squadron, Langley Field, Va., on Sept. 18th and gave B-17 No. 63 a very thorough inspection.

AN ADEQUATE AIR ARM FOR THE NATION'S DEFENSE

ADDRESSING on September 23rd, last, the convention of Reserve officers at Oakland, Calif., Major General O. Westover, Chief of the Air Corps, spoke as follows:

"For three consecutive years now I have had the pleasure and privilege of being present at the annual convention of the Reserve Officers. It gives me pleasure to meet with men engaged in important pursuits who are willing and able to devote a portion of their valuable time to national defense. I count it a distinct privilege to address you in order to acquaint you with some of the problems which confront the Army Air Corps in its vital effort to provide an adequate air arm for the nation's defense, and to ask your continued interest and support of the program.

While the great majority of you are undoubtedly interested in every phase of the military establishment, obviously you want me to discuss primarily subjects closely related to the Army Air Corps Reserve. Presently I shall do this, but first I want to emphasize another matter which I fear is too often overlooked. The Air Corps Reserve comprises but a small portion, numerically, of the total Reserve strength. For years, however, I have held strongly to the conviction that none of us can afford to be primarily Air Corps, Infantry, Field Artillery, Cavalry, etc. Every military man is primarily a soldier. All of us in the War Department are coming more and more to the feeling that officers of the various branches cannot separate themselves into little water-tight compartments and work exclusively for their respective arms.

It has been demonstrated on the battlefields of three continents within the space of the last few months that battles are won by military *teams.* True, these teams are composed of elements - Infantry, Cavalry, Engineers, etc., - the combat branches, which are supported in the field by the supply and technical services. Without everyone of these essential elements no fighting team is complete, nor can it deliver at maximum efficiency.

Years ago there was a feeling, in some quarters, when any new arm was created, such as the Air Corps or Chemical Warfare services, that these 'young upstarts' were interlopers; that they were taking the money away from the older services. That feeling was a hold-over from the time when we had a small standing army - a few regiments at isolated posts.

The World War washed away, or should have, the last vestige of that feeling. Thinking military men now realize that military strength cannot be counted in squads, troops, squadrons, or even in Divisions. Successful war in modern times is no longer a skirmish between tribes, mobs, or hastily assembled and hurriedly equipped little units of warlike men. As a matter of fact, man-power may not now be the best measure for military strength. Man-power is merely one of the essential elements. Transportation, manufacture - all industry - must be mobilized and organized to achieve victory. The old political rallying cry, 'A million men can spring to arms over night' is now recognized as a futile cry of pacifists, pinks or the uninformed.

The point I wish to make, the thought I wish to leave with each of you, is that when men today, anywhere in the world, go to war they do it primarily, not as Infantrymen, Artillerymen, or Flyers, but as working members of the fighting team of combined arms. That is why every up-to-date, worthwhile officer must be familiar with the tactics and the strategy of all the arms. Tactics are not learned on the drill ground. Individual or unit training in its more rudimentary elements may be taught there, but tactics are learned in our higher schools and they are tried out in Army maneuvers and perfected in exercises involving all the arms and services.

With this preliminary therefore, gentlemen, I feel no hesitancy in taking a few minutes of your time to tell you something of the problems, plans and policies of the Air Corps as it fits into the national defense picture.

First, for some specific details on the Air Corps Reserve plans and policies in which I know you will be interested.

For many years following the War all we were able to do was to give the Reserve flyers an opportunity to fly a little on their own time at our Air Corps stations. The planes were few in number, funds for gasoline and oil and maintenance were extremely limited and, as a consequence, the War Department was often charged with abandonment of the flying reserve and with lack of interest in keeping it in an up-to-date, well trained and healthy state.

Much of that criticism was unjust. After the War there was a general let-down in provision of funds for military purposes of every character. A great many people felt that we had just concluded a war to end all wars. Re-armament in Europe and succeeding conflicts had just began to impress us with the necessity of maintaining an active military establishment in this country when a terrific and general fiscal depression settled on the world and did not leave America out. The provision of food and shelter for the unemployed left little money to provide for anything else. So, we have had a hard time during a great many of the twenty years since the war in securing the financial sinews to provide as large a military establishment - Regular, National Guard and Reserve - as many of us felt we should have.

True, the Reserve was allowed to deteriorate and flying time was cut to the minimum, but during those same years the Air Corps of the regular establishment was reduced to a pitifully inferior state of size and effectiveness. Now that the national consciousness has awakened to the vital necessity for an increase in size and efficiency for the regular establishment, that same impetus is making it possible for us to make more adequate provisions for the Air Corps Reserve. Last year thirty-three new airplanes were furnished to Reserve Units. This year we are buying thirty-three more and next year we have funds in the budget for an additional thirty-three. These planes are of modern type with the latest equipment in every regard.

I am informed that Corps Areas are progressing as rapidly as possible with the plan which the War Department approved more than a year ago of organizing Air Corps Reserve officers into military units - squadrons, and groups - to insure that organizational as well as individual training can be accomplished. This is a far-reaching step in the right direction. It will enhance materially the general value of the Reserve in the Air Corps.

We have sufficient funds available to call between five hundred and five hundred fifty Reserve officers to extended active duty for periods from three to five years. These men will be put into GHQ tactical units for the most part and will become working members on exactly the same status as regular officers;that is, flight leaders, engineering officers, operations officers and group staff officers. Not only is it our desire to make these men as effective as the regular officers in those units, but it is absolutely essential that we so employ them, because we have not enough regular officers to furnish complete complements for our squadrons. It is unfortunate, but it is unavoidably true that the great progress in recent years in the development of Army airplanes has made it more difficult to fit the flyer without recent training into the active combat unit. No longer is it enough for an Army airman to be a capable pilot. He must be skilled in radio technique and navigation, and he must be familiar with the many modern devices and accessories which have been built into the up-to-date fighting airplane.

During the last war we turned out more than thirty thousand flyers, each with less than two hundred hours, put them in airplanes and sent many of them out to do combat. We can never do that again. We have important reasons preventing any such procedure in the future. In the first place, these air combat crews will be riding in a machine which may cost a quarter of a million dollars, and which takes a long time to build if it has to be replaced. It is too powerful and too important a fighting machine to be intrusted with any but a well-trained crew. Likewise, we know from what is going on in the rest of the world, whomever our opponent may be, he will oppose us with excellent aircraft manned by thoroughly trained and experienced crews. It will take six months at a minimum to train the military pilot of the future, even in war time. Then it will take another six months to give him the unit and organizational training to fit him for air combat.

It is the realization of these facts which has assured and continued our interest in our flying reserve. The men whom we are turning out from our flying schools and whom we cannot, unfortunately, take into the regular establishment for lack of funds, have, and will continue to have for several years, if they stay in any branch of the civil flying game, a very high potential value, since they will have had at least that first six months' training and can start immediately on the second six months' phase when hostilities threaten.

Often I am asked as I travel over the country, how may Reserve officers do any worthwhile peace-time training the better to fit them into the military set-up. An example came to my attention recently which I think is the best answer to that query. At Schoen Field last July a group of Reserve officers assembled for their two weeks' training period. They organized themselves into a squadron, with all staff and command positions manned by Reserves. They took the six planes which were available to them,made up their flying schedules, and conducted their operations so thoroughly and efficiently that each pilot was enabled to secure more than fifty hours of flying in the two-week period. This pilot time included more than ten hours blind flying per pilot; it included night flying, radio communications, photography, and formation flying in addition to excellent instructions in essential ground subjects.

Now for a brief discussion of more general military topics. I have noted a tendency of late in certain quarters, both in this country and abroad, to point to the Ethiopian war and to the struggles now in progress in Spain and China as evidence of the fact that airplanes are not vital nor essential war machines and that Air Force operations do not have the far reaching effect on military campaigns many have long contended. As you Air Corps Reserve officers have gone about your daily pursuits, you have undoubtedly met many people who have made queries like these to you, knowing that you are Army flyers: 'Why is it that Japan does not destroy Chinese cities with her Air Force? How does it happen that in Spain air operations have not been more extensive and conclusive?'

Questions like these have been propounded to me frequently, some of them by friends of ours who are not antagonistic to our purposes but are really asking for information which they have not been able to secure in tangible form from press reports. Others, and probably the majority, come from individuals really at heart antagonistic to military aviation and are asked in the hope that they will embarrass us.

Here, briefly, are the explanations which I make to such queries. I explain that all air operations are divisible into two distinct categories. First, there is the use of airplanes in conjunction with ground arms which form a combat team. When thus employed airplanes furnish observation for the Infantry, fire-control data for the Artillery, and information and photographs for command and staff purposes. Attack aviation is also frequently used as a highly mobile 'air artillery' for a direct assault on ground troop concentrations, troop and transport columns, etc. Then I point out that the second and major sub-division of air operation is what we term 'air force employments.' Here, large units of Bombardment aircraft may be employed far beyond the influence of ground arms against strategic centers such as great cities, important commercial arteries, manufacturing centers and fleets of surface craft.

I then show that Italy employed aviation very effectively in Ethiopia in conjunction with her other arms; that, in fact, many of her own leading military men have pronounced airplanes one of the decisive factors in the hasty conclusion of those campaigns. I also show that both in Spain and China similar operations have proved successful and have materially influenced the progress which the military team has been able to make. The principal point to bear well in mind, however, is that there have been no modern Air Force operations attempted in either of these three theaters. Anyone, therefore, who attempts to draw any conclusions as to the probable effect of Air Force operations from the fighting either in Ethiopia, Spain, or China, as they have occurred to date, makes this grievous error - undoubtedly due to a confusion between Air Corps operations and Air Force operations. I think all of us who have the interest of military aviation close to our hearts should be quick to do all that we can to prevent false conclusions being drawn about air power.

There is another matter which I wish to bring to your attention. We have heard the War Department criticized at one time or another because, in the opinion of these critics, it was not devoting enough attention and spending enough money on aviation. It is always easy to criticize destructively. Too often criticism of that type is made without a full realization of the whole picture. Because I have noted this tendency, I am now anxious to tell you some of the things the War Department has done, is now doing and plans for Army Aviation. One of the tangible evidences is the fact that we have now more than one thousand planes on order, many of which are nearing completion. These are the most modern military types and, in my opinion, are equal to or superior to those being produced in any country in the world. The budget for 1938 provides for over 700 additional planes. If we continue at our present rate of progress we shall have the Army Air Corps built up to the 2320 airplanes authorized by 1940. Our enlisted strength has been increased to 17,784 men as of June 30th, last. Our commissioned strength has not been proportionately increased, but the War Department is thoroughly conversant with our problem, and the reason for our commissioned personnel shortage is due to limitations of funds for their pay.

I have found both the Secretary of War, the Honorable Harry H. Woodring, and the recently appointed Assistant Secretary, the Honorable Louis Johnson, to have the interest of military aviation close at heart. I know that I am correct when I say that no other phase of military affairs gets more of Secretary Woodring's time or personal attention than does Army aviation and the procurement of aircraft. In this connection, I want to quote from a speech he made over a nation-wide hook-up, believing that some of you may not have had the opportunity to hear his remarks. Said the Secretary of War on the night of August 6th:

'At the present rate of procurement the strength of 2320 planes for the Air Corps will be reached by June 30, 1940. There have been great advances in aircraft development in the last three years. This strength of 2320 planes, when obtained, will give us an Air Force far more powerful than that fixed by the Baker Committee of 1934. Our new planes possess greatly increased power, speed, endurance, maneuverability and reliability. We can say with confidence that the airplanes now being delivered to the United States Army are the best and most highly efficient in the world.'

Mr. Woodring also said: 'We have made more recent progress in development of our Air Force than in any other direction. Four years ago we had a small and very widely scattered Air Force under a number of different commanders. Today we have a compact and highly efficient Air Force under a single commander. It is a highly mobile force of great striking power. In conclusion, our personnel and planes are at least the equal of the world's best.'

The Honorable Louis Johnson, Assistant Secretary of War, on August 14th, last, in an address at the dedication of an airport in his home State, West Virginia, showed his interest in Army Aviation and his great pride in its accomplishments. He pointed at length to what our Experimental Division at Wright Field has done for the civil aviation industry and the great influence military aviation has played since the beginning in the world of aeronautics.

I think it behooves every patriotic American to get behind our military leaders and support their efforts in our behalf; to aid them in every possible regard in their earnest attempt to further the progress of our air arm. Take it from me, the Secretary of War has an air program - the biggest air program this nation has ever had in peace time. He is keenly alive to our troubles and our needs. The least we can give is our whole-hearted support and full cooperation.

You Reserve officers who flew with us during the War and who have maintained your Reserve status during all the intervening years have, I feel, lasted out the long dry spell. You have come with us over the worst part of the journey. I sincerely believe that you will be rewarded henceforth in many tangible ways. In the first place, I can assure you that I and all my staff realize your great value to the air arm in the military defense of the nation. Every effort will be made to permit you to maintain your fighting efficiency at a high level. If trouble comes, many of your members will be qualified to hold and will be placed in positions of great responsibility."

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MIMIC WARFARE ON THE PACIFIC COAST

The Pacific coastline, just off-shore from Bolinas, will shortly be the scene of an intensive mimic war, where screaming Bombardment airplanes will bring down in flames innumerable enemy Pursuit ships in the guise of a target towed from another airplane.

In order to maintain their ability "to fight, to bomb, to shoot," the 7th Bombardment Group will shortly start intensive training to sustain their aerial marksmanship. The target, a sleeve-like canvas cone, towed behind an airplane, will be attacked from all angles by the Hamilton Field aerial gunners.

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Lieut. Colonel Orlo H. Quinn, stationed at Chanute Field, Ill., was assigned to duty as student to take the photographic course at the Air Corps Technical School at that post.

SELFRIDGE PURSUITERS TO TEST NEW TARGET

Citizens of Michigan living in the vicinity of the various aerial gunnery ranges used by the fighting planes of the famous 1st Pursuit Group of Selfridge Field, Mich., will soon be stretching their necks at a most unusual sight. The Group is about to begin tests on a new type of aerial gunnery target which promises to be a vast improvement over the old familiar white sleeve target.

According to Major Edwin J. House, Commanding Officer of the Group, who recently returned from Dayton, Ohio, where the new target is being manufactured at the Materiel Division at Wright Field, the new target is in the form of a panel 60 feet long and 6 feet wide. It is so designed that it may be towed through the air with the plane of the target either horizontal or vertical. Tests have already been conducted, using as much as 7,000 feet of towing cable, although it is thought that 4,800 feet will provide sufficient protection for the towing airplane.

By using a target of this type, recent changes in Pursuit gunnery training to include mass firing on large ground targets can be extended to include mass firing at a flying target. The huge panel, towed by a bombing plane flying one mile ahead, will be used to test the accuracy of aerial fire delivered by whole flights and squadrons firing simultaneously while maneuvering in mock air battles. An electric windlass provides means of releasing and retracting the target.

Earthbound citizens need have no fear of a rain of bullets from the sky - at least so far as our own Army is concerned - since all firing on aerial targets is done far out over the lonesome waters of Lake Huron where only an occasional ore boat is to be seen. Even then firing must be halted until all possibility of danger is past.

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SCORE ONE FOR THE WORLD WAR VETS.

Touching on the participation of the 36th Pursuit Squadron, Langley Field, in the aerial demonstrations over New York City during the time of the American Legion Convention, the Scribe of that outfit says that it came home convinced of at least one thing, viz: Our modern equipment may make us more formidable a force in time of war but, when it comes to celebrating peace, the World War Vets have it over us like a chattel mortgage. "Our most dependable social lions," he declares, "came back like lambs after a few hours on lower Manhattan."

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THE HAWAIIAN ISLANDS

By an Air Corps officer who served there

On a perfect day towards the end of June, after more than the usual baggage trouble, we terminated a vacation in California and set foot on the Army transport "Chateau Thierry." This was the first of many happy surprises for, compared with the many horrible tales we had heard of travel by this means, our accommodations were very comfortable.

Our trepidation at the expectation of mal de mer were soon allayed, and the six-day passage settled into a routine of pleasant lassitude broken thrice daily by the assuaging of the pangs of hunger, never quite so acute as on shipboard.

The most vivid recollections of a smooth passage are those of constant motion, of the almost black and metallic appearance of deep water and of our first definite knowledge that flying fishes (Malolos) really fly.

At about 2 a.m. of the sixth morning out of "Frisco," the delightful cool breeze which had been entering our port hole suddenly ceased, and in our restlessness we realized that the throbbing of the engines had ceased, as had the lulling rocking of the ship. Knowing we were near our destination, the first sunbeam found us on deck, eager for a view of our new home. Imagine our surprise at seeing the sun rise over Diamond Head. In our ignorance we had expected to see all land to the westward, but ships arriving during the night anchor in the lea of the southeastern tip of Oahu, the world-famous extinct volcanic crater known as "Diamond Head."

Within a few minutes we were thrilled to be greeted by a large mixed formation of all types of military airplanes stationed in the territory, constituting our first view of an "Aloha" flight, which is sent to greet each Army Air Corps officer on his arrival and to speed him on his departure. In each case a thrill of pride in the Corps is bound to be felt.

About eight o'clock we docked, and another tremendous thrill was felt when the large military band struck up with "Aloha Oe," and the many friends of each person on board strung beautiful flower "leis" around his neck. This custom is not confined to the military service but applies to every person arriving at or leaving the islands.

From the docks, after attending to the required formalities, we were driven through the city of Honolulu, Fort Shafter and the navy yard to the dock, where we embarked on a 15-minute boat trip to Luke Field, situated on little Ford Island in the center of Pearl Harbor, the Navy's anchorage and base.

By the end of the first few months, mainly spent in getting settled, acquainted and started on new duties, we had driven and flown around the Island of Oahu sufficiently to have a very good idea of the scenery and topography and had gained a knowledge of a number of customs and the forms of amusement available.

The first beautiful drive taken by everyone is up through Nuuanu Valley to Nuuanu Pali, where the bottle-neck formation of the hills gives rise to the violent air currents so universally talked about because so unusual. On the trip up the steep, well-paved road, beautiful houses in ideal settings are the rule. Lovely Oahu Country Club and its grounds appear on the left. An unusual tea room, operated by the Salvation Army, is a little further up the valley but off the main road.

After passing the last buildings, the road winds through forests, dotted here and there with light-topped kukui trees and comprising luxuriant greenery. Near the Pali and across the valley from the road appears a small waterfall which, on exceptionally windy days, is blown back upon itself in a spray and only falls a few feet intact.

After a few more bends in the road and a slightly steeper incline, one's breath is fairly taken away by the suddenly appearing view from the pass itself. The beauty of the hill formations on each side, the sudden drop straight ahead, and the beautiful view of the low land and sea constitute a scene which will never leave the memory of one fortunate enough to have viewed it.

The road continues down the side of the mountain and then splits so that the traveler can round the Eastern Point of Oahu, stern Makapu Head, passing Coco Head and Coco Crater; Fort Ruger, a strong Coast Artillery defense; and Diamond Head, and returning to Honolulu by means of a drive of about fifteen miles. The traveler may also take a drive of some 100 miles, circling Windward Oahu and returning to Honolulu through the central plateau. This latter trip contains so many interesting features that it will be described later.

The next trip usually made is to the summit of Mount Tantalus. The verdure throughout the climb is so dense that one has to stop and walk to the edge of the steep slope of the mountain itself before catching the magnificent views of Honolulu, its harbor, Punchbowl Hill, Diamond Head, Waikiki beach, the Pacific to the south and east and the neighboring islands of Molokai and Lanai. If the season is spring or early summer, the profusion of color lent by the many flowering trees adds to the beauty of the picture. The Poinciana, or Flame tree, lends dashes of deep red while the less spectacular but individually more beautiful yellow shower and purple shower trees harmonize in the riot of color.

If one is fortunate he stumbles on the rarer specimen of a "Rainbow Shower" tree, which is immediately recognized because so aptly named, due to the variety of colors contained in its cluster-shaped blossoms.

In late May and early June the lover of unusual and particularly beautiful flowers will forego the pleasure of early retirement for the purpose of viewing the blossoms of the night-blooming Cereus. These blossoms are fully a foot in diameter and at least six inches in depth. They are predominantly white with yellowish centers and are exotic beyond casual description. The vines on which they bloom look much like "Aaron's-rod Cactus" but trail along rock walls. The only public places where they are planted, to our knowledge, are at Punahou Academy and Kamehameha schools.

In the next article it is proposed to elaborate on the trip "around the island."

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AIR FIGHTERS OF THE GHQ AIR FORCE TO WEAR NEW SHOULDER PATCH

Unadorned no longer will be the broad shoulders of the officers and enlisted men of the General Headquarters Air Force, according to a recent announcement by Major General Frank M. Andrews, commander of that organization.

The General stated that the Secretary of War, the Honorable Harry H. Woodring, had approved a distinctive shoulder patch for the air guardians of the United States.

Symbolizing the speed which characterizes the Bombers, Pursuit, Attack and Reconnaissance planes of the GHQ Air Force, the new shoulder patch will consist of an ultra-marine blue three-bladed impeller, the curved surfaces emanating from the points of an imaginary three-quarter-inch equilateral triangle. This will be outlined against an orange disk which will be two and three-quarters inches in diameter.

The three blades of the impeller, or propeller in motion, will represent the three wings of the GHQ Air Force. This was the number of wings in the original organization and is the number now assigned. The First, a three-group unit, is on the Pacific Coast; the second, with four groups, is on the Atlantic seaboard, and the third, a two-group organization, guards the Gulf Coast.

The patch will be worn on the left shoulder on both officers and enlisted men. It will provide a colorful addition to the present hkahi and olive drab uniforms. It is expected that the Philadelphia Quartermaster Depot will start issuing it within the next few months.

General Andrews requested the War Department for authority for the shoulder patch several months ago and was asked to submit a design. The approved patch is the result of the collaboration of many members of the Air Force and is believed to represent well in heraldric form the organization and capabilities of the GHQ Air Force in National Defense.

Staff officers at headquarters stated that approximately 7700 enlisted men and 550 officers would be wearing the patch when everyone has been outfitted. These are stationed at Langley Field, Va.; Mitchel Field, N.Y.; Selfridge Field, Mich.; March and Hamilton Fields, Calif., and Barksdale Field, La.

In his letter of approval, the Secretary of War described the shoulder patch as follows:

"The design represents the GHQ Air Force, that is, the striking combat element of the Air Corps as originally organized into three wings. The action expressed by the three-bladed impeller is symbolic of speed, mobility, flight through space and destructive power exemplified by the GHQ Air Force."

The GHQ Air Force, with General Andrews as its first commander, and directly under the Chief of Staff of the Army, was organized and placed into active service on March 1, 1935, as the culmination of years of agitation for an Army air force. Its organization followed closely on the heels of the recommendations of the Baker Board, appointed by the Secretary of War in 1934 to determine the needs of America's air defense.

Two GHQ Air Force concentrations have been held, using all available planes. The first was held in Florida in December, 1935, back in the days when it was struggling with obsolescent airplanes and the inevitable creaks and groans attendant on any new and untried organization.

The second concentration was held in California in May of this year. Better airplanes and a smooth running efficient organization, still at reduced strength, however, permitted the precise execution of simulated war problems. Hordes of midwinged and streamlined Bombers zipped through Western skies with terrible accuracy; low-winged Attack jobs performed their missions with snap and verve, and the entire Air Force turned out such a creditable exercise that high praise was elicited from representatives of the Secretary of War.

Other worthwhile missions have been the cold weather tests of 1936 and 1937, the first flight of land planes across the Caribbean early this year, and three joint exercises with the Navy.

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A BRIEF FOR OIL DILUTION FROM THE RECEIVING END OF UNSATISFACTORY REPORTS

By the Materiel Division Correspondent

"Why, that is something we should have thought of long ago," said a Wright Field visitor the other day after listening to the explanation of the oil dilution system.

Like all other ideas, after being conceived, they are so simple. The self-starter on the automobile, for example. You can easily picture the brown-derbied dapper Dan of 1900 with his girl friend jumping out of his horseless carriage and positively announcing, "Must be that new fangled self-starter that caused all the trouble."

Not being thoroughly acquainted with the makeup of the horseless carriage,our early friends must be classed as uninformed. It never occurred to them that old Lizzie might have some of the million other things wrong that is still causing her 1937 grandchild to stop occasionally even now. The self-starter today, like other man-made articles, still has its "bugs," but contributes only its proportionate share to automobile failures. Similarly, your oil dilution system, which incidentally has most of its bugs ironed out, contributes only its proportional share of grief to the complexities of your modern airplane but, like the self-starter in the hands of the uninformed, shoulders all the blame for everything that happens.

"It must be that new fangled oil dilution system," say the uninformed and, following the line of least resistance, write an Unsatisfactory Report.

Now, on the end where the engine Unsatisfactory Reports usually wind up (incidentally with a million more or less indorsements and in about as many days later), there are other Unsatisfactory Reports which complain of similar troubles for similar or like engines under similar or like conditions, on airplanes that never heard of oil dilution. What is the answer?

Over a period of some three years, extensive tests in the laboratory and in service have indicated that oil dilution is fundamentally sound. The cold room, the dynamometer, the torque stands, and flight in airplanes of various types with both air-cooled and liquid-cooled engines, have proved that oil dilution is fundamentally sound. Those best acquainted with it, swear by it. Those unacquainted with it, swear at it. Tests referred to above include full throttle operation for some 75 hours on Model 1535 engines, with stops at one-hour intervals; 50 hours of full throttle on Model 1820 engines without frequent stops; and the normal service in airplane installations under all climatic conditions.

In none of these tests have there been failures or difficulties except the slight corrosion on aluminum alloy parts of some overhaul engines as a result of lead-salt compounds formed from the lead used in the gasoline. Some parts of the engine that are highly stressed, such as bearings, crankshafts, etc., come through overhaul in exceptionally good condition inasmuch as a small amount of lubrication evenly distributed is better than no lubrication at some points and an accumulation of heavy oils at others, during those first few critical revolutions of the engine at starting. Proper treatment of aluminum alloy parts along with reduction of lead content in our new gasolines is expected to reduce the lead-salt corrosion to a negligible level.

The mysteries that surround your hopper tank are no more than a stovepipe with holes at the bottom placed in the oil tank. Oil coming from the engine enters the top side of the stovepipe and goes more directly to the engine than if it were splashed in normally. This arrangement does not prevent new oil adjacent to the stovepipe from bleeding in at the bottom and thence to your engine. Laboratory tests indicate that the oil circulating through the most direct route wears out and away, with little contamination to the remaining oil,which stays practically new.

This phenomenon, although quite desirable, was not expected from original ideas. In spite of the commercial ballyhoo of changing oil every 500 or 1,000 miles, comprehensive tests indicate that this is an unnecessary waste with the oil dilution system. Out of a clear sky we stop changing oil in those airplanes equipped with oil dilution; and over night mechanics and pilots pay particular attention to their oil. It's black, and contains soft particles of carbon. Screens and Cuno's come in for a third degree. Soft particles of carbon, although they do look bad, really do no harm to the engine. They've been there for years, and the oil industry will pay homage to the man who can pass the magic wand and do away with it.

Give oil dilution its just blame or credit, but don't make it shoulder the responsibility for all the engine failures which in most cases could be traced to previous hours of abuse in the form of running too lean, stretching the gas supply, overspeeding, climbing too steeply, or just plain cockpit trouble, a disease which we all have and which is humanly permissible considering the complexities of our modern airplanes.

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Captain Milo N. Clark recently took over the command of the 77th Pursuit Squadron, Barksdale Field. He was formerly stationed at Randolph Field.

LIEUT. COLONEL ROSENHAM BEAM

Lieut. Colonel Rosenham Beam, Air Corps, now on duty in the Plans Division, Office of the Chief of the Air Corps, was born at Bardstown, Ky., June 11, 1895. After graduating from high school, he attended the University of Louisville, Louisville, Ky., for three years. In June, 1915, he was commissioned a second lieutenant of Infantry, Kentucky National Guard, and on July 19, 1916, he was attached to the 7th U.S. Infantry at Fort Bliss, El Paso, Texas, where he was on border patrol duty until April, 1917.

Ordered to Fort Sill, Oklahoma, to take the battery officers' course at the School of Fire for Field Artillery, Col. Beam, upon completing this course, remained at Fort Sill to complete the course at the School for Aerial Observers. From July 3rd to September 12th, 1918, he was on duty at the Aviation Concentration Camp at Camp Dick, Dallas, Texas, and for several weeks thereafter he attended the Aerial Gunnery School at Selfridge Field, Mt. Clemens, Mich. He was then ordered to the Air Service Depot at Garden City, Long Island, N.Y., preparatory to proceeding for duty overseas, but with the signing of the Armistice he remained on duty as a casual officer at Garden City until December 13th, when he was transferred to Kelly Field, Texas, and assigned to the 6th Company, 2nd Provisional Wing, as its commanding officer.

On January 4, 1919, Colonel Beam was assigned as Assistant Personnel Adjutant, and shortly thereafter assumed additional duties as Assistant Transportation Officer and Commanding Officer of the 313th and 681st Aero Squadrons. He also underwent flying training and completed same on July 12, 1919. On July 29th, he was assigned to the Headquarters of the 8th Aero Squadron, with which organization he served as Radio Officer and Aerial Observer at McAllen, Texas, for the period of one year.

Transferred to Godman Field, Kentucky, Colonel Beam served as Adjutant, Personnel and Survey Officer of the detachment at that post until May 5, 1921, when he was transferred to Langley Field, Va., for duty as Operations Officer of the 14th Bombardment Squadron. He participated in the bombing operations on German ships off Cape Hatteras.

Returning to Godman Field on October 1, 1921, he performed the duties of Operations Officer, Intelligence Officer and Educational Officer with the 88th Observation Squadron, in addition to other duties, until September 20, 1922, when he was assigned as a student at the Field Officers School at Langley Field (later changed to the Air Corps Tactical School). His graduation from this School was followed by a tour of duty in the Philippines, where he served as Operations Officer of the 28th Bombardment Squadron from October 17, 1923, to December 3, 1923; Post Operations Officer at Camp Nichols; Commanding Officer of the 28th Bombardment Squadron; Post School Officer and Post Survey Officer until October, 1925. At various times he was in temporary command of Camp Nichols and the 4th Composite Group.

In December, 1925, Colonel Beam returned to Kelly Field, Texas, where he assumed command of the 41st School Squadron, served as Squadron Supply Officer and as a member of various boards of officers. On October 6, 1926, he was transferred to Duncan Field, Texas, for duty at the Air Corps Training Center, serving as its first Executive Officer. On July 26, 1927, he assumed command of the 11th Bombardment Squadron, and served in this capacity until the end of December, 1927, when he was detailed for duty at Havana, Cuba, as senior officer of a mission of Air Corps officers to assist the Cuban Government in the establishment of a flying school.

Returning to the United States in July, 1931, Colonel Beam, after completing a two-year course at the Command and General Staff School at Fort Leavenworth, Kansas, was ordered to duty at Fort Riley, Kansas, as instructor at the Cavalry School. Two years later, on July 1, 1935, he was assigned to the Office of the Chief of the Air Corps for duty.

Colonel Beam was commissioned in the Air Service, Regular Army, as a second lieutenant on July 1, 1920, and on this same date was promoted to Captain. He was promoted to the rank of Major on January 1, 1932, and to Lieut. Colonel (temporary) on June 16, 1936. He holds the flying ratings of "Airplane Pilot" and "Airplane Observer," and is on the General Staff Corps Eligible List.

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LIEUT. COLONEL HARRY H. YOUNG

Lieut. Colonel Harry H. Young, Air Corps, entered the Air Service from the Infantry, New Jersey National Guard, in November, 1917. He served with the National Guard (non-federal service) in all grades from Private to 1st Lieutenant for 8½ years, and when it was in the Federal service as Battalion Sergeant Major for four months and as 1st Lieutenant for seven months. He was born April 28, 1888, in Germany, and was educated in the schools in that country.

Prior to joining the Air Service, he served with the 113th Infantry at Camp

McClellan, Ala., for three months. Following the completion of the ground school course at the School of Military Aeronautics, Austin, Texas, he was sent to duty overseas and took the observers' course at Saumur, France. He also took courses in aerial observation at the 2nd Aviation Instruction Center at Tours, France, and at the French School at Camp De Souge. He then served at the front as an observer with the 8th Observation Squadron for two months, and as Operations Officer for the 354th Observation Squadron for one month.

Shortly after returning from overseas, Colonel Young received orders to organize the 4th Observation Squadron. He took this Squadron to Hawaii and served as its commanding officer during his entire tour of duty there (January 24,1920 to March 10, 1923), except for short periods when he was on special duty as Operations Officer of the Hawaiian Division Air Service. Upon returning from Hawaii, he was assigned to Kelly Field, Texas, where he served as Assistant Wing Operations Officer, in addition to performing various other duties, until September 15, 1923, when he began the course of training at the Primary Flying School at Brooks Field, San Antonio, Texas. He completed this course on April 7, 1924, and the advanced course at the Advanced Flying School, Kelly Field, Texas, on September 13, 1924.

In October, 1924, Colonel Young was transferred to Langley Field, Va., where he was on duty as a member of the Air Service Board until November, 1926, when he was assigned to duty as Air Corps Instructor, 35th Division Air Service, Missouri National Guard, St. Louis, Mo. He served on this detail until June, 1930, and was then assigned to duty as a student at the Air Corps Tactical School at Langley Field, Va. Upon the completion of the one year course of instruction at this School, he was assigned to station at Brooks Field, Texas, where from August 14, 1931, to March 6, 1932, he was in command of the 22nd Observation Squadron. Thereafter, until August 2, 1932, he performed the duties of Executive Officer of the 12th Observation Group and of Brooks Field, and at various periods was in temporary command of the post and the Group.

At his next station, Fort Crockett, Galveston, Texas, Colonel Young was on duty as Executive Officer of the post and Operations Officer of the 3rd Attack Wing until September, 1934, when he was assigned to take the two-year course of instruction at the Command and General Staff School, Fort Leavenworth, Kansas. Following his graduation in June, 1936, he was assigned to duty in the War Plans and Training Division, Office of the Chief of the Air Corps, Washington, D.C.

Colonel Young was commissioned in the Air Service, Regular Army, as a First Lieutenant on September 13, 1920, with rank from July 1st of that year. He was promoted to Captain with the same date of rank; to Major, February 1, 1932, and to Lieut. Colonel (temporary), June 16, 1936. He holds the flying ratings of "Airplane Pilot" and "Airplane Observer," and is on the General Staff Corps Eligible List.

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GRADUATION AT ADVANCED FLYING SCHOOL

On Wednesday, October 6th, Class 29-B, composed of 40 student officers and 49 flying cadets, finished the course of instruction and were presented certificates of graduation from the Air Corps Advanced Flying School, Kelly Field, Texas. The ceremonies of the day began with an inspection of the airplanes and crews at 8:00 a.m.

Following the inspection, airplanes began to take off at 9:10 a.m. Effecting rendezvous at Kelly Field No. 2, airplanes began passing in review at 9:30 a.m. The graduation review flight was composed of formations of Keystone Bombers, BT-2's, O-25's, BT-8's, BT-9's, A-12's, A-17's and P-12's.

At 10:45 a.m., the graduation exercises were held at the Post Theatre, with Brigadier General Frederick L. Martin, Air Corps, Commanding the Third Wing, Barksdale Field, La., delivering the address.

The names of the officers and flying cadets who are members of this graduating class were published in the previous issue of the News Letter.

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ELECTRIC RAZORS AND RADIO DO NOT MIX

The Bureau of Aeronautics, Navy Department, in announcing that Scouting Squadron Two took over the LEXINGTON Base Radio Station with all its attendant woes, stated that with new shops an reinstallation of power equipment, many hitherto unnoticed squalls and groans from various sources of local interference cropped up to the detriment of clear and rapid communication. After a sweeping investigation, a power drill was isolated as the offender in cutting out practically all voice traffic. As the Communications Officer and his gang of "trouble shooters" were relaxing in the Base Radio Station, a terrific din came from the loud speaker, completely drowning out all authorized sounds. Scouts were hurriedly dispatched to trac down the source of interference. A rapid search of the shops disclosed no power equipment operating. No nearby trucks offended. No one was dialing a nearby phone. Baffled, the trouble shooters paused. One of the scouts, more alert than the rest, searched stealthily

(Continued on Page 19)

BARKSDALE FLYERS SHUFFLE OFF TO BUFFALO

The 20th Pursuit Group, led by Major Armin F. Herold, Air Corps, departed from Barksdale Field, Shreveport, La., on September 12th on a routine training flight to Buffalo, N.Y. The 27 single-seater Boeing fighters took off in three echelons at half hour intervals. Headquarters accompanied the 77th, which cleared the airdrome at 6:30 a.m., the 55th and 79th following in order.

The planned itinerary was followed closely, with refueling stops at Memphis and Cincinnati, with the exception that inadequate servicing facilities at Cincinnati made it necessary for the 79th and 55th to proceed to Columbus, Ohio, and Patterson Field, Ohio, respectively, for full service after picking up a small amount of gas at Lunken Field. The time saved by this move permitted the group to land at Buffalo before dark, only one hour behind schedule, although the last squadron to land reported difficulty in judging the black cinder runways in the gathering dusk.

At Buffalo the Group was the guest of the Curtiss-Wright Company, and seldom in its history had it been more hospitably received. After a gala dinner at the Trap and Field Club, the party split into two parts, one heading for the hay and the other for the hey-hey, with the former considerably outnumbered.

Following a good night's rest, the Group was privileged to meet Burdette Wright and his associates at the Curtiss Factory, and then to go through the plant where all the phases of airplane manufacture was painstakingly explained to the pilots. After lunch at the airport, the new Bell Fighter was turned over to the Group for inspection, and a keen interest was displayed in its many novel features.

After such an extremely pleasant and absorbingly interesting visit, the boys were reluctant to leave, but the inevitable take-off was made at 3:00, and Major Herold's "So-long Buffalo" over the radio marked the end of an unusually profitable experience. The trip to Selfridge Field was made via Niagara Falls, where the Texas and Louisiana contingents nearly fell out of their cockpits for rubbernecking. The weather was perfect, although considerably colder than down below the Mason and Dixon Line.

At Selfridge Field an agreeable evening was spent renewing old acquaintences and visiting friends. The Group took off at 8:15 the following morning for Dayton, Ohio. Two ships remained behind, one for an engine change and the other for replacement of a starter. The latter rejoined the flight at Scott Field later in the day, and the former proceeded to Barksdale Field the following day.

Upon arrival at Dayton, the flight was shown about the various technical branches at Wright Field under the courteous direction of General Robbins, Chief of the Air Corps Materiel Division. Considerable interest was aroused and interesting comparisons made by the availability of all three of the new Pursuit ships for inspection, the P-35, P-36 and P-37. The Group left for Scott Field at 3:15 p.m.

The remainder of the flight was made after dark and was accomplished without incident. The ships refueled again at Memphis and proceeded to Barksdale Field, where they arrived at five minutes before midnight.

Perhaps the most significant aspect of the flight was the degree of public interest aroused by the Group at the civilian airports of Memphis and Buffalo, where advance notice of its arrival had been given by Major Carlton F. Bond, S-3. Several thousand spectators witnessed the landings at Memphis, both going and on the return stop, while at Buffalo some ten thousand persons were on hand, and highways leading to the airport were jammed with cars, necessitating a heavy police detail for the protection of the pilots and the airplanes.

The personnel taking part in the flight were as follows:

Headquarters: Majors A.F. Herold, Carlton F. Bond and Lieut. O.R. Deering.

77th Pursuit Squadron: Captain M.N. Clark, Lieuts. P.K. Morrill, N.D. Sillin, C.P. Lessig, P.R. Learned, L.M. Rohrbough.

55th Pursuit Squadron: Captain M.R. Nelson, Lieuts. L.P. Dahl, B.L. Boatner, G.P. Disosway, L. Saxton, J.W. Hinton, H.B. Young, T. Keith, J.O. Reed and G.A. Blakey.

79th Pursuit Squadron: Lieuts. T.S. Olds, R.B. Landry, R.M. Kellogg, F.O. Easley, W.D. Camp, J. Ferguson, L.F. Stetson, and C.R. Greening.

The schedule made good by the leading squadron was as follows:

DEPARTED	TIME	DATE	ARRIVED	TIME
Barksdale Field	6:30 am	9-12	Memphis	8:25 a
Memphis, Tenn.	9:30 am	9-12	Cincinnati	12:45 p
Cincinnati, Ohio	4:00 pm	9-12	Buffalo	6:40 p
Buffalo, N.Y.	2:55 pm	9-13	Selfridge	4:30 p
Selfridge Field	8:15 am	9-14	Dayton	9:45 a
Dayton, Ohio	3:15 pm	9-14	Scott Field	5:40 p
Scott Field, Ill.	6:55 pm	9-14	Memphis	8:35 p
Memphis, Tenn.	9:25 pm	9-14	Barksdale	11:40 p

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PROMOTION OF AIR CORPS OFFICERS

The following-named Air Corps officers were promoted, effective October 1, 1937, to the rank indicated: Colonel John N. Reynolds (temp.) to Colonel; Lieut. Colonel Robert LeG. Walsh (temp) to Lieut. Colonel; Majors (temp.) George C. Kenney, George M. Palmer, John P. Temple, Byron T. Burt, Jr., and Earle G. Harper to Major.

Effective Sept. 24, 1937, Major Charles M. Savage, Air Corps, who held temporary rank in that grade, was promoted to the permanent rank of Major.

METEOROLOGICAL ACTIVITIES ON WEST COAST

The First Weather Squadron, Air Corps, was organized on July 1, 1937, for the purpose of furnishing an adequate weather service to Air Corps units which may be located either permanently or temporarily in the Pacific Coast Region.

The Squadron will, in the near future, have a strength of approximately sixty men and is at present under the command of Lieut. H.H. Bassett. Fixed weather stations are in operation at March Field, Calif.; Hamilton Field, Calif.; Moffett Field, Calif., and Fort Lewis, Wash. The March Field and Hamilton Field stations are in charge of Lieut. Sam H. Wiseman and Lieut. Theodore M. Bolen, respectively. Both of these officers are recent graduates of the course in Meteorology given at the California Institute of Technology.

Present operations include the taking of surface observations and winds aloft at all stations; the transmission of these reports by teletype and radio to other Air Corps and Department of Commerce Stations, the reception of weather information from other stations and the preparation and dissemination of weather forecasts. This last activity is at present restricted at some stations due to lack of trained personnel, but, under the training plan being carried forward at all stations and at the Air Corps Weather School, this deficiency will be remedied in the near future.

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COL. HOYT ASSUMES COMMAND OF 20TH PURSUIT

Several major changes have taken place during the past few weeks in the 20th Pursuit Group at Barksdale Field, La.

Lieut. Colonel Ross G. Hoyt took over the command of the Group, succeeding Major Armin F. Herold, who is now commanding officer of the 79th Pursuit Squadron. Col. Hoyt came to Barksdale Field from Washington, D.C., where he was on duty in the Information Division, Office of the Chief of the Air Corps.

Among the outstanding Air Corps events in which Col. Hoyt participated were the endurance flight of the Army Transport "Question Mark," wherein he was the pilot of the refueling airplane; his record solo flight, night and day flying, from New York to Nome, Alaska, July 18-19, 1929; the Alaskan Flight of B-10 Martin Bombers in the summer of 1934, and his leadership of the first formation night flight of a squadron of Pursuit planes from Selfridge Field, Mich., to Washington, D.C., and return, in February, 1931. Colonel Hoyt also played an important part in connection with making arrangements for the Army Air Corps' Good Will Flight around South America, December 20, 1926 - May 2, 1927, which expedition was headed by Colonel Herbert A. Dargue, Air Corps.

MANEUVERS BY 17TH ATTACK GROUP

The 17th Attack Group, March Field, Calif., will depart for Bakersfield, Calif., on October 27th for their annual ten-day maneuvers, which will complete Group field training for the year 1937.

Under simulated war conditions, the maneuvers will provide training in moving from the home airdrome to an advanced base, testing out new organization, flying and other equipment under field conditions away from the Group's permanent base, and a test of combat efficiency of the Squadrons within the Group while operating as a Group under field conditions with specific flying missions.

Headquarters and Headquarters Squadron, 17th Attack Group, with one medical officer and three medical enlisted men attached; the 34th, 73rd and 95th Attack Squadrons will operate with the full existing strength of 51 officers and 254 enlisted men, and flying equipment consisting of 32 Attack airplanes. Administration will be as a Group, with Lieut. Colonel Carlyle H. Wash as the Commanding Officer.

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ART OF PILOTING RISES TO NEW HEIGHTS

Requirements for pilots of the new multi-motored, multi-place airplanes are raising the art of military piloting to new heights. The piloting of these airplanes requires not only familiarity with and knowledge of all the instruments and accessories common to commercial transports, but also mastery of literally hundreds of purely military devices.

The present-day pilot must not only be able to fly the airplanes, but he must direct the work of many other members of the crew and be competent in case of need to man any of their positions. In order to insure this proficiency, requirements have been set forth by the War Department specifying that all pilots on this type airplane, such as the B-18 Bombardment airplane in use with the GHQ Air Force at Hamilton Field, have at least five years and 1,250 hours' experience as military pilots.

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All major airports in Northern California are being photographed by the 88th Reconnaissance Squadron of Hamilton Field, Calif.

These photographs will be used to revise the Airways Bulletin of the Department of Commerce, which is to include vertical aerial photographs of all landing fields in the United States. Work on this assignment is in the hands of Second Lieutenant William W. Pannis, Photographic Officer of the 88th Reconnaissance Squadron.

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NAVY AIRMEN VISIT VLADIVOSTOK

In the latest issue of the semi-monthly press release of the Bureau of Aeronautics, Navy Department, there appears an interesting account of the visit of the U.S.S. AUGUSTA to Vladivostok. The article goes on to say:

"This was the first visit of an American man-of-war to the Siberian port since 1923, and it is thought that the impressions gained may be of interest to members of the aeronautical organization who served in Vladivostok at the time of the Russian Civil War.

Opportunities for conversation with Soviet aviators were frequent but of no real value because of the language barrier, the reticence of the Russians, and their inclination toward exaggeration.

Aircraft of three types were in evidence. A nine-plane formation of pursuit ships was repeatedly seen at some distance and a similar formation of four engined bombers passed over the ship at a considerable altitude upon one occasion. The third type was a small, awkward looking, single engine boat. The fighters were of the low wing monoplane type and appeared to be extremely fast - certainly above two hundred knots. The bombers were also monoplanes with retractable landing gear and a very sleek, ultra modern appearance, but when seen were cruising very slow. Cruising speeds of four hundred kilometers were claimed for both types in conversation. All planes seen had one common characteristic - a long streamer of smoke trailing behind each engine of each plane. The only other item of aeronautical interest actually seen was the tower for practice parachute jumping on a hill on the edge of the bay.

The men of the Soviet Navy are extremely young, stalwart, bronzed, keen and alert, and are well uniformed. Discipline appeared to be good and the morale high."

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The construction of the Attack Range at Mulberry Island for the 37th Attack Squadron of Langley Field, Va., is now being completed by the 1st Air Base. A detail from the 37th, under the direction of 2nd Lieut. James M. Jones, Air Res., constructed the 50-yard square bombing target for small bombs, the target for individual machine gun firing, and the chemical range. The 1st Air Base is now constructing the circular target for the 100-lb. bombs, and is also working on plans for an Area Target.

All the pilots of the 37th Attack Sqdn. are busily engaged making the various qualifying runs on its new range. In the events completed, namely, Chemical, 50-lb. external bombs, and parachute bombs, all the pilots have qualified as experts.

NEWS FROM THE PHILIPPINES

By the Nichols Field Correspondent

News from the Far Eastern Zone should be by radio flashes to keep up with the rapid turn of events. However, a few details contained herein may not be amiss.

The 28th Bombers came through the earthquake of August 20th without a scratch. The only apparent effect was a sudden change in a watch which was undergoing several weeks of calibration by the navigation class. The chronometer had been gaining about three seconds per day, but the night of the earthquake it lost three seconds.

Torrential rains have soaked Nichols Field until operations are sadly curtailed. This bids fair to be one of the wettest "Rainy Seasons" on record. Although behind on their flying directive, the 28th Bombers are engaged in a strenuous training campaign.

Our Skipper, 1st Lieut. E.H. ("Wump") Porter, believes in preparedness. When you see our "Rainy Day Schedule" you'll likely agree that it constitutes preparation for almost any emergency. The B-10B combat crews alternate from trap shooting to bomb trainer the first three hours each morning. A goodly spirit of competition has sprung up between combat crews as well as between officers and men and between armament, radio and engineering sections. So far, honors at traps go to Lieuts. J. A. Miller and W.W. Bowman, with their combat crews of Staff Sergeant Hobbs, Corporal Siedband, Private Ruskowsky and Staff Sergeant Stockwell, Private 1st Class Burgess and Private Cook, respectively. Lieut. N.B. Harbold has individual high score of 23 out of 25.

The spirit of competition carries excited interest into the other phases of training. Gunners vie the best camera gun shots and machine gun scores. Squadron prizes are offered each month to the best trained combat crew. Bombing and aerial gunnery records count along with traps, pistol, camera gun and ground machine gun scores.

Each rainy morning at 10:30, all pilots gather for an hour of navigation class. "Skippy" Harbold is ably supported by "Joe" Miller on our teaching staff.

Many of us are housing refugees from the war in China. Wives and children arrived on the S.S. PRESIDENT HOOVER with their family heads still up in the Chinese hills and all means of communication blocked. The men did not know that their homes were broken up or where their families were. Private Dunning, of the 28th Radio Section, proved himself "a friend in need" with his amateur radio station at Nichols Field. He has been in constant communication with

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THE 1500 H.P. ENGINE

In the October issue of the Journal of the Society of Automotive Engineers, Mr. A.L. Beall, Vice President of that Society, Representing Aircraft-Engine Activity, states that "Unquestionably, in the engine field, the development of the greatest interest in the year 1937 is the 1500 horsepower engine.

The engine of 1000 horsepower was the product of steady but slow growth over a period of years with a takeoff horsepower output in four figures representing the climax of a series of small increases in horsepower made possible by better designs and better materials.

Apparently, the aircraft industry has arrived at the conclusion that there are many advantages in the use of two engines as opposed to four, which can be realized if the total power output is not seriously below that of four engines at takeoff. Economy of installation of two engines, the reduced maintenance, and the greater simplicity of controls for the pilot with two engines, as compared with four, all have a distinct appeal to the aircraft industry.

Coincident with the crystallization of thought in favor of two engines of adequate power came the fourteen-cylinder two-row radial engine with 1500 brake horsepower for takeoff and commensurate cruising output. No development in the engine field in recent years has been more timely or accomplished with fewer pangs of partunition."

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THE TRICYCLE LANDING GEAR

Mr. Fred E. Weick, Society of Automotive Engineers Vice President, Representing Aircraft Activity, discussing the tricycle landing gear in the October issue of the S.A.E. Journal, states that the application, as carried on jointly by the Army Air Corps and the Douglas Company of that landing gear to larger airplanes constituted the most interesting development in aircraft during the past twelve months, in his opinion, and he alludes to himself as an admittedly prejudiced observer.

"The transport airplane," he says, "should be benefited in three distinct ways by the adoption of the tricycle landing gear. First, blind landings will be easier, for the landing can be made at any reasonable speed without necessarily leveling off the flight path before contact with assurance that the airplane will stay on the ground after contact is made. In addition, full application of the brakes during the entire ground run can be made without danger of nosing over. Second, because the tricycle gear is stable in taxiing and free from the tendency to ground loop, landings can be made easily and safely with the wind blowing strongly across the runway, and it therefore seems likely that airports having only one long runway may be satisfactory. Third, the tricycle gear should contribute to the comfort of transport passengers for the fuselage floor is level when the airplane is on the ground.

Experiments in application of the tricycle gear to larger airplanes have been carried on by the Air Corps and the Douglas Company in a sound and thorough manner. Starting with the information gained from installations on small airplanes, systematic ground tests were made with a towed carriage fitted with a tricycle gear, several features of which could be varied. After these tests a tricycle gear was fitted to a Douglas Dolphin amphibian having a gross weight of 9,000 lb. This was put through a series of take-off and landing tests and then flown by many different Air Corps pilots at various Air Corps fields throughout the country.

During the same time the N.A.C.A. has been continuing the investigation of certain factors connected with tricycle gears, particularly those having to do with the possible shimmying of the front wheel which would be serious if it occurred on larger airplanes.

With this background, the next step in the development is now taking place in the use of a tricycle gear on the new forty-passenger Douglas DC4 four-motored transport having a gross weight of 60,000 lb. which is now being completed."

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News from the Philippines

(Continued from Page 18).

"Hams" in China, sending and receiving news of home and family.

Manila has taken on a new aspect with so many refugee visitors. Ships leave cargo bound for Shanghai and complete business enterprises have moved into town. Nichols Field has no end of technical advice available, since engineers and technicians of Pratt & Whitney, Martin, Wright and Northrop have moved in, en masse, evacuating China in favor of Manila. Even the night life of our great city has picked up considerably with the addition of Argentine orchestra and a wealth of entertainers from Shanghai.

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Electric Razors and Radio

(Continued from Page 15).

on and discovered the perpetrator of the crime. The storeroom keeper in a nearby shop was completely blanking out all transmission by using his electric razor.

97TH SQUADRON BUSY AS ONE-ARMED PAPERHANGER

By the Mitchel Field Correspondent

When the cold wintry winds blow and the heavy snows begin to drift (for winds will blow and snow will drift) at the Air Base at Mitchel Field this winter, one of the busiest outfits at that station will no doubt do a little "ground flying" in memory of the busy and well-spent summer of 1937. The 97th Observation Squadron, one of the earliest and most active of the recently created Corps & Army Aviation units, after having completed two periods of annual field training exercises, participated in First Army Command Post Exercises. Individual pilot's proficiency training, annual War Department Training Directive Program, and cooperative missions with nineteen line organizations at twenty-one different points covering three Corps Areas were also carried out. In spite of this, they are not even now sitting back in their cockpits for a few winks of sleep, for they have already completed much of their current Training Directive and ground school for officers and men. The 97th insists that they have been busier than the proverbial cat on the tin roof!

The fact that this Squadron does not belong to the 9th Bombardment Group, GHQ Air Force, based at Mitchel Field, is not indicative of a "back seat" in flying or tactical operations. They began the calendar year with a 3-day unit trip to Jacksonville, Fla., which was actually a shakedown cruise for the then recently acquired O-46 airplanes. In late May, the Squadron moved planes and barracks bags to Groton, Conn., where it remained for a two weeks' visit, tactically as guests of the Connecticut National Guard, but socially as guests of the Submarine Base and Coast Guard. This constituted field training for the Fiscal Year 1937. The aftermath was the predicament of the lone sub-bather at Napatree, who insisted his mid-day siesta had been rudely interrupted by the stray lead pellets of winged death sprouting from an itinerant airplane. He was so mortally scared that he could not accurately describe the plane, but did survive to tell the tale. After returning from this trip, the 97th squadron began a three-week session of answering questions and cleaning slightly soiled airplanes for the one or two future generals temporarily disguised and absolutely incognito among 300 First Class cadets of the United States Military Academy.

When the First Army began drafting plans for a map and paper war at Fort Devens, Mass., in late August, it was the 97th Squadron which was called upon to provide the only authentic or warlike atmosphere exhibited in the entire engagement. It was during this assignment that the Squadron flew an O-39 airplane in an entirely new and radical type of mission, scattering Prestone over the historical New England farm meadows. Incidentally, the performance of this Attack Aviation mission is believed to be definite proof of the versatility of the 97th - and the O-39.

It has been the cooperative missions with ground units, however, which claimed the interest and attention of the majority of the flying personnel. Between the Ohio River Valley flood photography in February and the Fort Totten Coast Artillery Anti-aircraft searchlight tracking in September stretches a long line of target towing, air-ground liaison by radio, drop and pick-up missions, panel missions, and artillery adjustment. In fact, service missions for all branches of the Army, together with command and reconnaissance missions for all types of headquarters, platoon to Army included, were th usual run of the summer. In many cases, airplane and observation team operated for several days or a week from temporary bases and camps in conjunction with such troops and, occasionally, flying from a field fifteen or more miles from the camp of ground troops. At such times, flying personnel serviced and attended the mechanical upkeep of their planes and materiel, flew extensively during all hours of day and night, and attended conferences and critiques.

The aim of the Squadron throughout this work has been to develop high team work and a proper understanding of all methods of inter-communication between Observation Aviation and ground units. The experience gained by pilots and observers on these missions has been especially valuable in that they so nearly coincide with the type of work which it is anticipated Corps and Army aviation may be expected to perform under wartime operations.

Much credit for the success of the Squadron's activities is due to Major George C. McDonald, Air Corps, former Skipper, now attending the Command and General Staff School. The present Squadron Commander is Major Charles A. Horn, Air Corps, who was relieved as Base Operations Officer, Mitchel Field, for this duty.

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19TH BOMBARDMENT GROUP EXERCISES

Under the general supervision of Brigadier General Delos C. Emmons, First Wing Commander, GHQ Air Force, March Field, Calif., the 19th Bombardment Group conducted one of the most successful minor joint exercises held between the Army and Navy in many a year. The general purposes of the problem were to practice and determine the bombing accuracy at high altitudes against a fast moving towed target. Special purposes were to test and determine the present communications set-up and the relative merits of individual versus formation, as well as the various bombing patterns best suited to such targets. The Commanding General was especially pleased with the splendid cooperation between the officers of both services. Special appreciation is expressed to Captain A.L. Bristol, USN, in command; Lieut. Commander Caldwell, of the BOGGS; Lieut. Commander Pope of Patrol Squadron Eleven, and to Lieut. Commander Holland, Liaison Officer at March Field.

The immediate control of the exercises was charged to the 19th Bombardment Group, GHQ Air Force, commanded by Lieut. Colonel H.S. Burwell, Air Corps, assisted by Major J.K. Cannon, Air Corps, Operations Officer. The Group consiste of three squadrons, two of B-10B airplanes commanded by Major W.R. Peck and Captain C.I. Ferris, respectively, and one of B-18 airplanes commanded by Major D.V. Gaffney.

No overt or minor difficulties served to mar the general training or success of the exercises. Colonel Burwell expressed himself as deeply appreciative of the zealous and energetic manner in which all officers and men of his command carried out their share of the problem.

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FLYING PROPELLER KILLS NATIONAL GUARD OFFICER

While standing in the hangar some distance in front of the airplane in which he was about to make a flight, Captain George G. Adams, of the 154th Observation Squadron, Arkansas National Guard, was the victim in one of those unusual accidents which happen on very rare occasions. The mechanic, who was asked to taxy the plane out of the hangar to the field, entered the cockpit and started the motor. Just before he was ready to put the plane in motion, he realized that something had happened. He shut off the motor, and looking forward saw Captain Adams lying on the hangar floor directly in front of the plane. A witness standing near the end of the left wing of the plane stated that the motor had run about 15 seconds when the propeller flew off, struck the floor about 14 feet in front of the plane, and bounced forward to strike Captain Adams, whose body was found about 36 feet in front of the plane. The propeller continued horizontally near the floor, passed under three other ships and stopped near the east wall of the building, about 104 feet away from the plane.

Captain Adams was born in Little Rock, Ark., September 5, 1899. After attending the Little Rock public schools, he entered Sewanee Military Academy at Sewanee, Tenn., and at the outbreak of the World War resigned to enlist in the Army. He was assigned to a heavy tank corps and saw service in France until the Armistice. He later served with the Army of Occupation, and was mustered out of the service in the Spring of 1919.

Receiving flying instruction at a commercial school, Captain Adams, in 1929, joined the 154th Observation Squadron as a second lieutenant. He was later promoted to first lieutenant, and in June, 1936, to Captain. He was regarded as one of the most efficient pilots in the organization.

During the time he was a member of the City Council of Little Rock, Captain Adams served several times as Acting Mayor. Greatly interested in aviation matters, he served as chairman of the Airport Committee of the Council, and was instrumental in securing the concrete runway recently completed at a cost of $137,000.

The News Letter Correspondent states that "This is the first fatality in the Squadron since its organization in April, 1925. Captain Adams, or 'El Capitan,' as he was affectionately known among his fellow officers, acted as Operations Officer at our last encampment during the maneuvers at Fort Riley, Kansas. He performed his duties as Operations Officer so efficiently that he was praised very highly by the Regular Army officers of the Second Cavalry Division, Fort Riley, Kansas. To meet his death on the ground, through no fault of his own, is tragic, to say the least." The Correspondent further states that the name of the Little Rock Municipal Airport has been changed to "Adams Field," in honor of Captain Adams.

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DUTY ASSIGNMENTS OF ADVANCED SCHOOL GRADUATES

Under Special Orders of the War Department, recently issued, the commissioned officers who graduated on October 6th from the Advanced Flying School, Kelly Field, Texas, were transferred to the Air Corps, effective October 1, 1937, with rank as of the date of their graduation from the U.S. Military Academy. These new Air Corps officers were assigned to duty with the Air Corps at the stations indicated:

Philippine Department, sailing from San Francisco, Calif., about January 28, 1938:

Second Lieutenants

John K. Arnold, Jr., C.A.C.
Carl K. Bowen, Jr., Field Artillery
Cecil E. Combs, Cavalry
Conrad F. Necrason, Signal Corps
Edward E.L. Burke, Infantry
John M. Bartella, Infantry
William E. Covington, Jr., Infantry
William M. McBee, Infantry.
Joseph W. Nazarro, Infantry.

Panama Canal Department, sailing from Charleston, S.C., November 5, 1937:

Carl T. Goldenberg, Infantry
Carl M. Parks, Infantry
William W. Jones, Infantry
Von R. Shores, Jr., Infantry
John R. Kelly, Infantry
George P. Champion, Infantry
Frank W. Gillespie, Coast Artillery
Charles M. McCorkle, Field Artillery
Robert D. Gapen, Field Artillery
James W. Twaddell, Jr., Cavalry
Dwight O. Monteith, Corps of Engineers

Hawaiian Department, sailing from San Francisco, November 13, 1917:

Frederick Bell, Coast Artillery Corps
Richard H. Carmichael, Field Artillery
Frederick R. Terrell. Field Artillery
Clinton D. Vincent, Field Artillery
Turner C. Rogers, Infantry
Laurence J. Ellert, Infantry

Mitchel Field, N.Y.:
Wallace C. Barrett, Infantry, for duty with the 97th Observation Squadron.

Maxwell Field, Alabama:
William B. Grohs, Cavalry
Clinton U. True, Infantry

Brooks Field, Texas:
Clark L. Hosmer, Infantry
Ernest S. Holmes, Jr., Infantry.
Charles B. Stewart, Coast Artillery Corps
Norman C. Spencer, Jr., Field Artillery

Moffett Field, Calif.:
Jay D. Rutledge, Jr., Field Artillery

Selfridge Field, Mich.:
William L. Kimball, Infantry
Albert P. Clark, Jr., Cavalry

Langley Field, Va.:
William G. Lee, Jr., Infantry

Chanute Field, Ill.:
Seward L. Hulse, Jr., Field Artillery

MOSAIC PHOTOGRAPHY FOR U.S. GEOLOGICAL SURVEY

Completing a 1,380-square mile project of mosaic photography for the U.S. Geological Survey, a photographic ship of the 23rd Photo Section, with 1st Lieut. Paul Hanley as pilot, returned to March Field on September 29th.

With Technical Sergeant William M. Brees, of the 23rd Photo Section, as the photographer and Corporal Victor Woodward, of the 38th Reconnaissance Squadron, as mechanic and crew chief, Lt. Hanley lifted the Fairchild C-8A from the March Field mat on September 9th and proceeded to Montana, via Las Vegas, Nevada, and Salt Lake City, Utah.

At West Yellowstone, where work began, the men were delayed for seven days due to clouds. When the weather finally cleared up, allowing them to continue work, they made rapid progress for several days until snowfall forced them to abandon that area.

From Yellowstone, the men flew to Boise, Idah Idaho, on the second leg of their project, and thence to Eugene, Oregon, where the mission was completed.

During the photographic operations, Lieut. Hanley flew at altitudes from 15,000 to 21,500 feet, where extreme cold was encountered, necessitating the use of a considerable amount of oxygen. The cabin heater kept the cabin temperature of the Fairchild at about 25 degrees F., when outside temperatures were down as low as six degrees below zero.

Using a K-3B (Fairchild) 8$\frac{1}{4}$" focal length camera, Sergeant Brees made a total of 1200 exposures, 7" x 9" each, everyone of which he loaded, unloaded and developed in improvised dark rooms without the loss of a single exposure.

Upon returning to March Field, via Medford, Oregon; Sacramento and Bakersfield, Calif., Lieut. Hanley said that the office of the Geological Survey at Sacramento had expressed both pleasure and surprise at the rapidity with which the expedition completed the mission. The photo material gathered will be an invaluable aid to the Geological Survey in making and improving maps of the areas photographed.

Lieut. Hanley also stated that the airplane, which had a total of 61 hours' flying time, functioned perfectly despite the fact that they were at times forced to use inferior grade gasoline, and that Corporal Woodward's excellent services as crew chief were mainly responsible for the plane's performance.

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The News Letter Correspondent of the 154th Observation Squadron, Arkansas National Guard, Little Rock, Ark., states that the new Squadron hangar is practically completed and "we have already begun moving into it. Within the next month, all the details should be completed, and we hope to be able to furnish a room so that we will be able to take care of all visiting pilots who care to spend the night with us. We are very proud of our new hangar and we are planning to have a formal opening some time within the near future."

WAR DEPARTMENT ORDERS

Changes of Station

To Randolph Field, Texas: Major Harvey W. Prosser, Captain Shelton E. Prudhomme, 1st Lts. Richard A. Legg and Francis M. Zeigler from the Philippines; 1st Lieut. John M. Price, from Panama.

To Buffalo, N.Y.: Major Arthur E. Simonin, from Middletown, Pa., Air Depot, to duty as Air Corps Representative at the plant of the Curtiss-Wright Corporation.

To San Antonio Air Depot, Duncan Field, Tex.: Captain Clarence F. Horton, from Maxwell Field, Ala.

Active Duty for Second Lieutenants, Air Reserve

Herbert Arthur Dorr, North Adams, Mass., assigned to Langley Field, Va., to November 1,1940.

Lowery L. Brabham, Montgomery, Ala., assigned to Randolph Field, Texas, to October 2, 1940.

Walter Paul Piehl, Evanston, Ill., assigned to Randolph Field, Texas, to October 6, 1940.

Arthur Hanson, Estherville, Iowa, assigned to Rockwell Air Depot, Calif., to October 14,1940.

Second Lieut. Norman A. Loeb, Cavalry, relieved from assignment and duty at Randolph Field, Texas, and assigned to 4th Cavalry, with station at Fort Meade, S.D.

Captain Jack Greer, Air Corps, appointed to temporary rank of Major, effective October 11, 1917.

Orders assigning Major Charles M. Savage, from Rockwell Air Depot, to Fort Lewis, Wash., revoked.

Colonel Theodore A. Baldwin, Jr., Air Corps, to go on retired list on November 30, 1937, at his own request, after more than 39 years' service.

Lieut. Colonel Coleridge L. Beavan, Medical Corps, who has been on duty at the School of Aviation Medicine, Randolph Field, Texas, as Assistant Commandant, has been assigned to duty as Commandant of this School, effective upon the retirement from active service of Colonel Arnold D. Tuttle, Medical Corps, the present Commandant. Colonel Beavan, several years ago, was on duty in Washington, D.C., in the Medical Section, Office of the Chief of the Air Corps.

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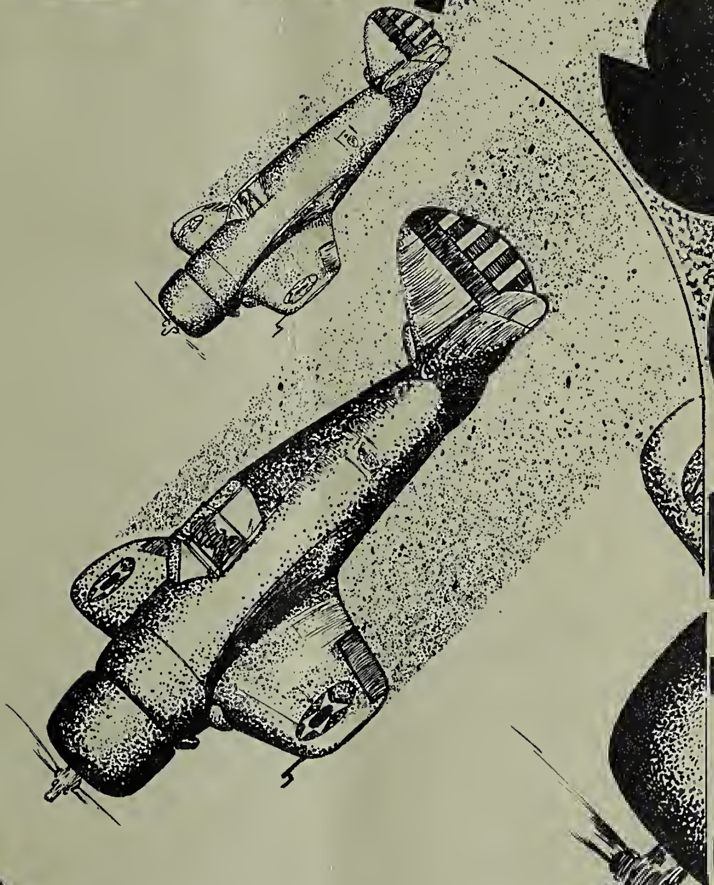
Major Newton Longfellow, Air Corps, Commanding Officer of the 88th Reconnaissance Squadron, Hamilton Field, Calif., recently flew to Wright Field, Dayton, Ohio, to attend a meeting of leading dead-reckoning navigators of the Army, whose purpose it was to inquire into the usefulness and the tactics resulting from the new navigation equipment necessary to obtain the utmost from ultra-long range airplanes now being used by the GHQ Air Force. Major Longfellow made the trip to Wright Field in a B-10B Martin Bomber.

AIR CORPS "TECH" SCHOOL



SUSTINEO ALAS

AIR CORPS NEWS LETTER

ECIAL EDITION OF THE AIR CORPS TECHNICAL SCHOOL, CHANUTE FIELD

ISSUED BY
THE OFFICE OF THE CHIEF OF THE AIR CORPS
WAR DEPARTMENT
WASHINGTON

L. XX
NOV. - 1 - 1937
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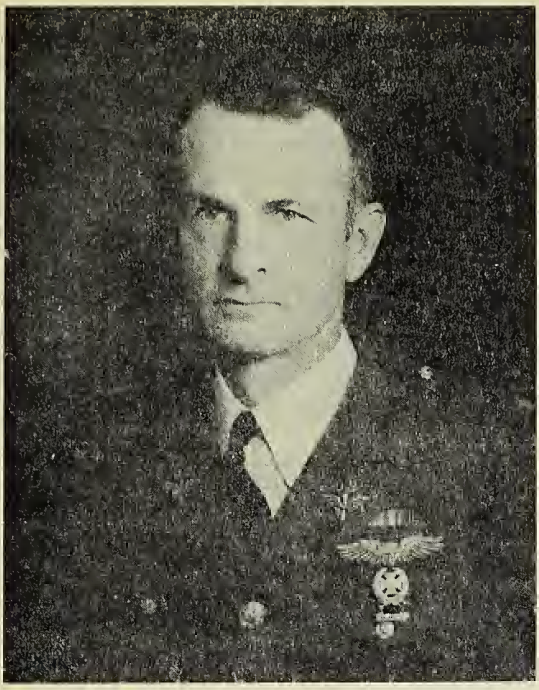
Foreword

The great progress that has been attained in the past few years in the technical field of aviation, particularly in its application to military purposes, has been accompanied by an ever increasing demand for trained specialists, not only in the mechanical operation of the airplane , but also in its purely military appurtenances. To meet this demand the meager facilities of the Air Corps Technical School have been expanded in a short time to such an extent that the annual output of such trained specialists has been increased from approximately 200 to 1000. Although plans are now being studied toward further expansion in the form of a branch school now being surveyed in Denver, Colorado, the resultant increase will still be inadequate to meet the requirements of the Air Corps, which requirements will be measured, not in hundreds, but in thousands.

The compendium is an effort to depict graphically what has already been accomplished and to stimulate the interest and cooperation of the entire Air Corps toward the realization of the true mission of the Air Corps Technical School. This mission will be realized when the standard of technical training of the Air Corps is raised to such a degree that accidents resulting from errors in technical operation are practically unknown.

Junius W. Jones



Junius W. Jones, Lieut.Colonel, A.C.,
Commandant

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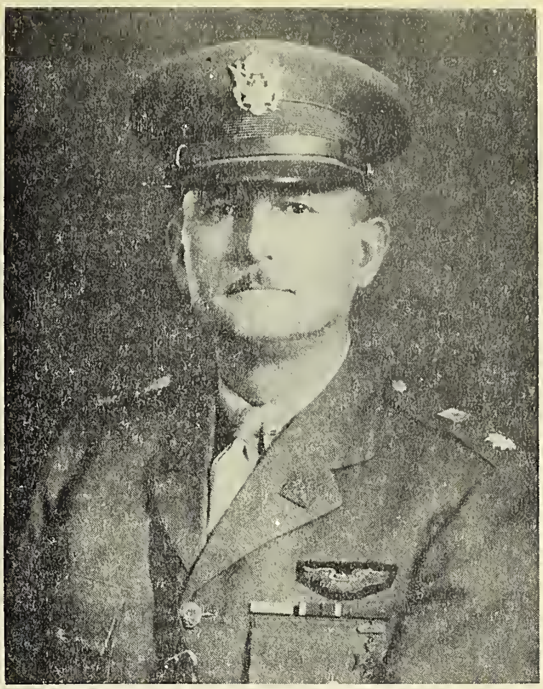
Born Louisiana April 3, 1890. Appointed Military Academy March 1, 1909. Appointed 2nd Lt. Coast Artillery Corps June 12, 1913. 1st Lt. July 1, 1916. Captain June 27, 1917. Air Service July 1, 1920. Major July 1, 1920. Transferred to Air Service November 25, 1921. Colonel (temporary) March 2, 1935. Lt.Col. August 1, 1935. Relieved Colonel (temporary) June 6, 1936. General Staff Corps Eligible List. Graduated Army War College 1930; Command and General Staff School 1929; Air Service Pilots School 1920; Air Service Observation School 1921; Air Corps Tactical School 1928; Naval War College 1934. Rated Airplane Pilot and Airplane Observer. Commandant, Air Corps Technical School, August 20, 1934.



Earle G. Harper, Major, Air Corps,
Assistant Commandant

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Born Ohio Feb. 3, 1890. Appointed from California. 1st Lt. Aviation Section Sig.O.R.C. Nov. 8, 1917. Accepted Nov. 14, 1917. Active duty Nov. 14, 1917. Capt. A.S.Nat.Army June 26, 1918. Accepted July 6, 1918. Vacated Sept. 15, 1920. 1st Lt. Infantry July 1, 1920. Transferred to Air Service October 26, 1920. Captain August 11, 1928. Lt.Col. (temporary) March 16, 1935. Major (temporary) June 16, 1936. Major October 1, 1937. Graduate Air Service Pilots School 1921; Air Service Observation School 1921; rated Airplane Pilot and Airplane Observer. Assistant Commandant, Air Corps Technical School, Sept. 22, 1934.

THE AIR CORPS TECHNICAL SCHOOL

HISTORY

The Air Corps Technical School, first known as the Enlisted Mechanics Training Department, was organized at Kelly Field, Texas, about October 1, 1917. Operating in tents and with inadequate equipment, very little was accomplished from October through December of that year.

Reconstruction of the school was started in January, 1918, resulting in improved conditions due to better housing facilities, more and better school equipment, and an adequate supply of text and reference books. Graduates of the school assigned to the various squadrons were found, to the surprise of all concerned, to be very valuable as airplane mechanics; this was sufficient cause to warrant the expansion of the school. Additional courses were incorporated and a short time later the name was changed to the Air Service Mechanics' School and it became a permanent organization of the Air Service.

The school was moved from Kelly Field, Texas, to Chanute Field, Rantoul, Illinois, in January, 1921. Some idea of its development may be gained from the fact that it required ninety freight cars to move the equipment to the new station.

The Photographic School at Langley Field, Virginia, and the Communications School at Post Field, Oklahoma, were transferred to Chanute Field in 1922 and incorporated with the Air Service Mechanics' School. Shortly afterwards, the name was changed to the Air Corps Technical School, its present designation.

FUNCTION

The principle function of the Air Corps Technical School is to supply the Air Corps with highly trained technicians for the maintenance of Air Corps equipment, correspondence and records. Students of the Air Corps Technical School receive a standardized form of training based on the essential requirements of Air Corps commissioned and enlisted personnel.

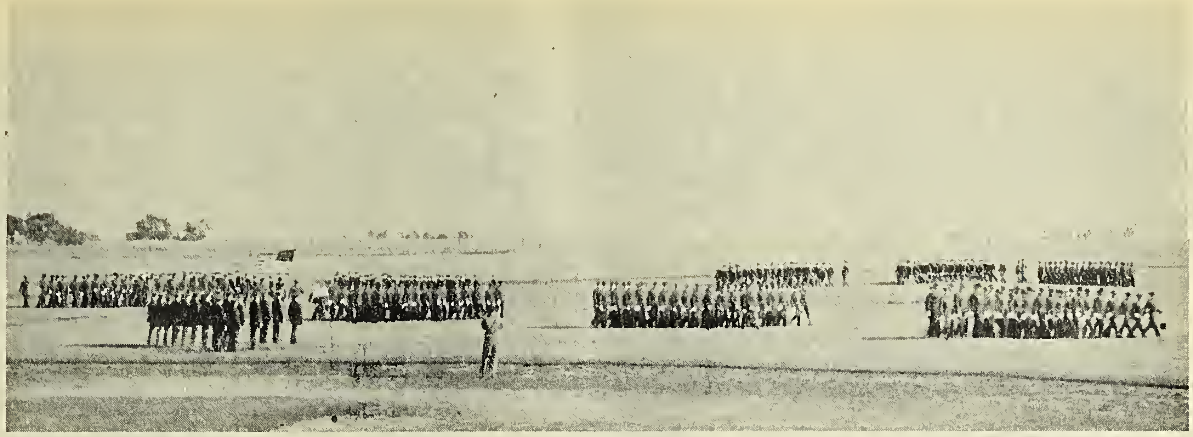
ORGANIZATION

The Air Corps Technical School is under the direct supervision and control of the Chief of the Air Corps. It is composed of six departments, namely, the Department of Mechanics, the Department of Armament, the Department of Photography, the Department of Communications, the Department of Basic Instruction, and the Department of Clerical Instruction.

The personnel of the school consists of the Commandant, school staff, and such student officers and enlisted men as may be enrolled for a course of instruction.

The Commanding Officer of Chanute Field is also the Commandant of the Air Corps Technical School, and is especially selected for this duty by the War Department. He has charge of general school administration and is responsible for all matters of instruction therein.

The Assistant Commandant is also selected by the War Department; under supervision of the Commandant he has charge of instruction and administration in the school. He has general charge of the preparation of training literature and such additional data as may be required to carry out the training program.



After 30 years service a review in honor of retirement of First Sergeant Edwin Booth, and presentation of a gold watch by his organization commander, Major E.G.Harper, AC.

The Secretary, under the supervision of the Assistant Commandant, conducts correspondence of the school, is custodian of the records thereof, and performs such other duties as he may be assigned.

The Directors, under the supervision of the Assistant Commandant, have charge of instruction in the various departments of the school. They are responsible for the direct supervision of the preparation of courses and instructional matter of their respective departments.

The Faculty Board consists of the Commandant, the Assistant Commandant, Secretary, and such Directors, Senior Instructors and Instructors as may be designated. It acts upon such matters relative to the school as may be referred to it by the Commandant and determines all matters relative to standing, rating or classification, proficiency or deficiency of students.

INSTRUCTION

The applicatory method of instruction is used throughout the Air Corps Technical School. A proper balance is maintained between classroom lectures and recitations, and shop and laboratory work. Practical jobs and exercises, representative of situations likely to be encountered in the service, are assigned to each student, who is encouraged to develop proper habits of work and to master all details of technique in accomplishing each job. Lectures are presented with the aid of physical and graphical demonstrations whenever such teaching devices may be used to advantage. The classroom work of officer classes is occasionally supplemented by lectures given by representatives of the Materiel Division. A welcome relief from the monotony of routine instructio is the annual spring inspection trip made by each of the student officer classes; future commissioned specialists thus are enabled to obtain first hand information concerning the development and production processes employed by government and industry in the manufactu of technical material for the Air Corps.

The Maintenance Engineering course for officers is of ten months duration, beginning in September; Armament, seven months beginning in December; Photograph nine and one-half months beginning the middle of September, and Communications, nine months beginning the first of October.

The classes of enlisted men are staggered in accordance with an approved time schedule to enable the several depa ments to accommodate classes of from eight to thirty men in the most efficien manner possible. The instructors are th enabled to give individual attention to each student. Students are graded daily on proficiency and are given an academic or examination grade after each examination, or at the end of each phase and course. Those students who fail two of the prescribed subjects are ordered to a pear before the Faculty Board where the cause of the failure is determined and recommendation is made on the dispositio of the student. The number of failures are few, since each enlisted student is carefully classified by the Trade Test D partment prior to entering the school. The functions of this department are ve similar to those of an employment depa ment of a large corporation. Each applicant must have certain specific qualifications for entering any particular cour By the use of intelligence tests, study personal record and a personal interview, the general qualifications of each applicant are determined. This, together wit his interest, desire, age, alertness, an the examiner's opinion as to his potential qualifications, form the basis upon which he is recommended for training. The eligibility of an enlisted man is determined only after a careful check has been made of the following qualifications:

1. Education:
    a. Public and High School;
    b. Higher, Technical or Trade Schools;
    c. Nature of courses elected while a student;
    d. Grades, or relative standing in mathematical or scientific courses;
    e. Army Schools attended.

2. Work History in Civilian Life:
    a. Trade followed, if any;
    b. Nature of jobs held, duties entailed, length of service, advancement, etc.

3. Army Service:
    a. Length of service;
    b. Principal duties since entering the service.

The Trade Test Department assembles the above information by the use of a comprehensive application blank, and subsequent verification through former employers and school activities.

The entrance examinations consist of the following:

1. Mathematics Tests:

These cover all phases of work in grammar school arithmetic (fractions, decimals, ratio, proportion and square root), elementary algebra, and geometry. When it is considered that in the Department of Basic Instruction only seven days are allotted to the teaching of shop mathematics, it is apparent that the applicant must possess a working knowledge of these subjects prior to entering the Air Corps Technical School, inasmuch as a thorough understanding of mathematics is essential if a student is to be successful in any course.

2. Aptitude Tests:

These are fundamental tests in Elements of Electricity, Shop Work, Knowledge and Use of Simple Hand Tools, Blue Print Reading, and such other tests as might be necessary to determine the technical qualifications or mechanical aptitude of an applicant for a course of study. These tests determine with equal success the aptitude of either the inexperienced high school graduate or the service man with training and experience of a technical nature.

3. Intelligence Tests:

The Army Alpha has been used in this school for many years, and is modified at regular intervals to keep its context from becoming out of date. It is so designed that it will furnish the necessary information to determine whether or not an individual is sufficiently alert mentally to assimilate, in the time available, the instruction given. A similar form of mental test is used in most of the high schools and colleges throughout the country, and has recently been adopted by many large industries as an aid in the selection of young men for apprentice training. Previous education and experience of the individuals tested have an important bearing on the test results.

4. Interview:

Upon his arrival at the school, each applicant is given a personal interview at which time it must be evident that he has sufficient interest in Radio, Mechanics, or any other course selected so that he will carry his work to a successful completion. The progress of each Air Corps, Chanute Field (unassigned) student is carefully observed while undergoing the four weeks of basic instruction to determine further his aptitude, adaptability, and qualifications for the course which he has selected. Occasionally it is advisable after checking his progress in various phases of Basic Instruction, to transfer a student to a course for which he is better suited.

GENERAL

To be graduates of one or more of the courses given at the Air Corps Technical School is the hope of the ambitious enlisted men of the Air Corps. It supplies them with the necessary technical knowledge to pass successfully technical examinations for Air Corps promotions.

The advantages of a course of instruction in this school are not only appreciated by those in the service, but also by those who have not had previous military experience, but who have learned of the school and the different courses offered. A priority list of civilian applicants for the Air Corps Technical School is maintained by the Trade Test Division. After enlistment, and upon completion of five weeks' recruit instruction, applicants are interviewed by the trade test examiner and detailed as students in courses for which they are best qualified. During the period covered by recruit instruction and the period of attendance at school, these students are carried as "Air Corps, Chanute Field," and are continued as such until their graduation when they are assigned by the Chief of the Air Corps to Air Corps stations.

Entrance requirements for officers and enlisted men of the Regular Army Air Corps are contained in Army Regulations 350-540 and Circular 35-7, Office, Chief of Air Corps.

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Mr. R. W. Faubian, Senior Instructor of the Trade Test Division, has just decided that Pfc. W. C. Ahrens of Selfridge Field is eligible for a course of instruction at the Air Corps Technical School.

THE DEPARTMENT OF BASIC INSTRUCTION

Captain Narcisse L. Cote, Air Corps,
Director.

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Perhaps you haven't heard of the Basic School in connection with the Air Corps Technical School? What you are mainly interested in when you think of Chanute Field is one of the technical courses taught there and the advantages to be gained in being a graduate of one of those technical courses.

It was discovered some time ago that it was rather difficult for some men to grasp even the simplest theories and formulae that are the basis upon which any technical subject is founded, particularly so when it had been some time since they had been to high school. Theories and facts of an abstract nature are easily forgotten unless they are brought to mind time and again until they become a habit of the mind through practical application.

Then too, although the prospective student may have handled tools of all kinds either in civilian life or in the Air Corps, he may never have learned the correct names of those tools or how to use them to best advantage so that the job each tool was made to do is done with that tool and done in such a manner that any other tool would not have done the job as well. The tools the Air Corps mechanic is mainly interested in are those used in connection with metalwork.

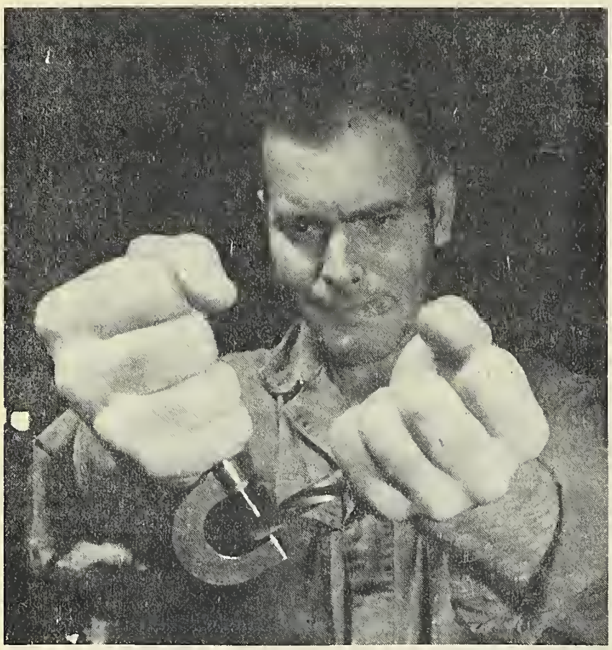
To those who make no use of them, blueprints and mechanical drawings may seem to be a mysterious jumble of lines, but to the mechanic, they are the written language of his work. Every Air Corps mechanic should be able to make simple mechanical drawings and should be capable of interpreting from a blueprint so that he may be able to follow the circuits of wiring diagrams and make installations as pictured in technical orders.

Electricity, it seems, is a major consideration in any technical subject. Almost every craftsman must use it in one form or another, the Air Corps technician should certainly understand the basic laws of electricity before he attempts to master the more complicated machines and defices connected with his trade specialty.

The School of Basic Instruction seeks to give the student an insight into all of these things in the very short space of four weeks that are allotted to that section of the school. You see, the idea is not to present added subjects to the student and thereby increase his work and make it more difficult for him to graduate; indeed, the opposite is true. The Basic School course is intended to make the technical courses easier for the student.

It is more or less a refresher course covering the high points of his high school work; bringing back to mind things that he once knew well, but has forgotten because of not having heard or used that knowledge over a period of time.

Nothing new or complex is presented in the course that the average high school graduate cannot grasp readily. Only the very basic elements of Shop Mathematics, Electricity, Tools and Metalwork, and Mechanical Drawing and Blueprint Reading are taught. The subjects are taught not with the idea of giving the students mere abstract knowledge to remember, but rather to give him a practical mental and workmanlike base to stand on in his future courses.



"Honest, my hands felt that big when I started to use a micrometer", says Pvt. A. H. Dell of Barksdale Field..

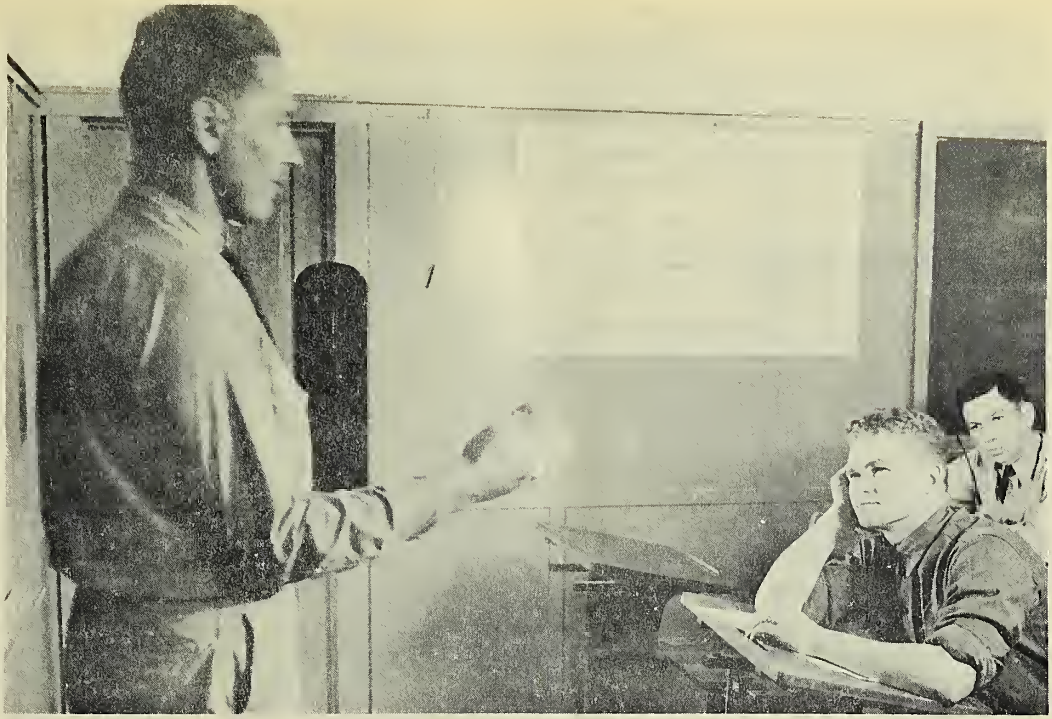
Don't get the idea that most of the work in the Basic School is study and lecture either. Only one-eighth of the time is spent in the classroom. All the rest of the time the student is in the laboratory or shop putting that classroom knowledge to work and demonstrating to himself the 'hows' and 'whys' of what he has learned.

A long time ago the directors of the various courses pursued at the Technical School realized that some sort of basic instruction was an essential preliminary to the training in any of the technical subjects and so, one by one, each course instituted its own basic instruction. To more readily standardize this work, it was later decided to group all the basic schools together inasmuch as the separate schools had all taught practically the same things. So now, we have the one course of basic instruction.

...."But heck, I can do it blindfolded after that course".

The whole purpose of the Basic School is to help the prospective student remember what he has forgotten and to get him started on the right foot for his technical schooling.

The Trade Test Division is that section of the Basic School which decides, even before the student starts whether or not he is capable of completing one of the courses at the Technical School. This section is also responsible for the make-up and marking of the



Pfc. T. A. Schild, Senior Instructor in Shop Mathematics says, "Now, if
three-fifths as many oranges as ......"

.....and Pvt. E. A. Crumley of Langley Field decides on a practical demonstration.

eligibility examinations taken for entrance to the Technical School. These examinations together with the tests for mental alertness given on arrival at the school form a valuable index of the student's capabilities and possibilities.

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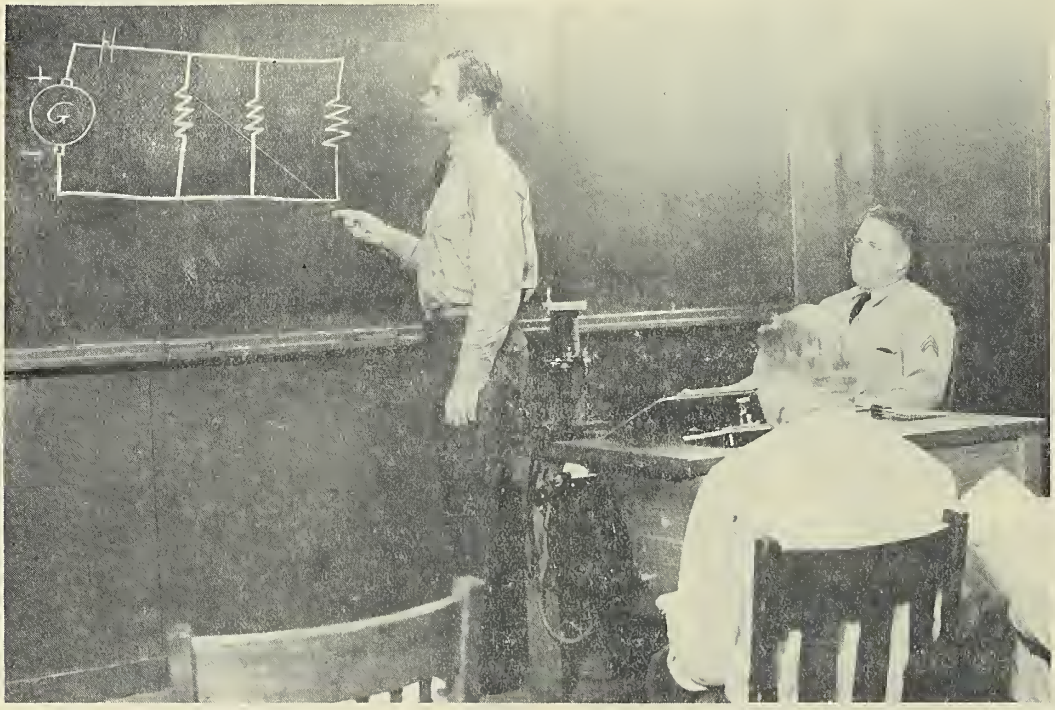
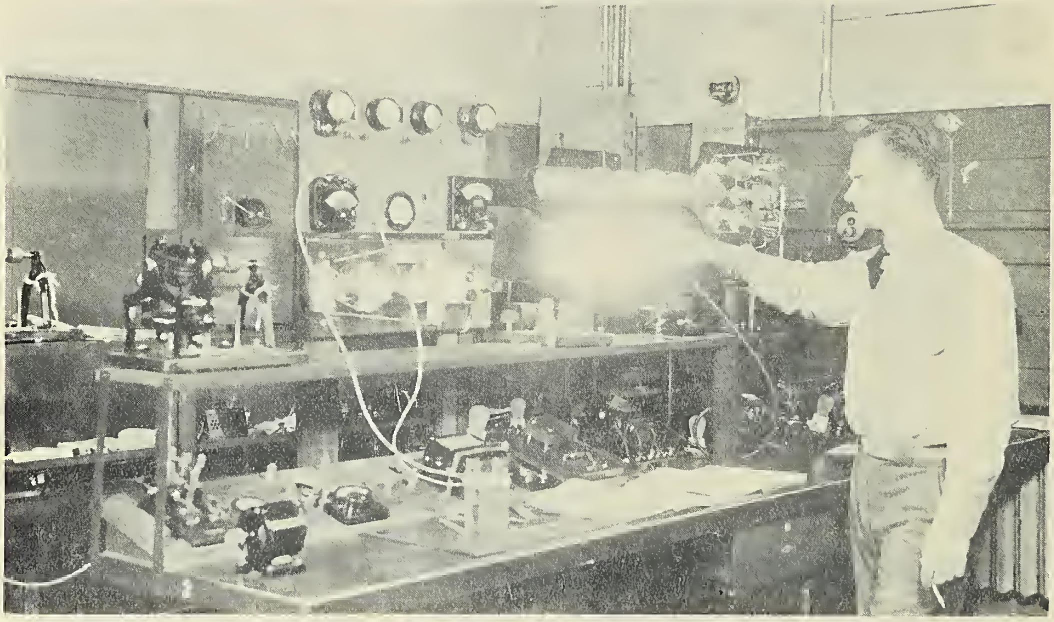


.....now it's Corp. Story's turn to tell about parallel circuits.....



....and finally, he constructs a circuit in parallel in the laboratory. He - won't forget what a parallel circuit is.

DEPARTMENT OF MECHANICS

Major William M. Lanagan, Air Corps, Director.

It is the function of the Department of Mechanics, Air Corps Technical School, to train officers and men in the various trade specialties involved in the operation, maintenance and repair of all types of military aircraft.

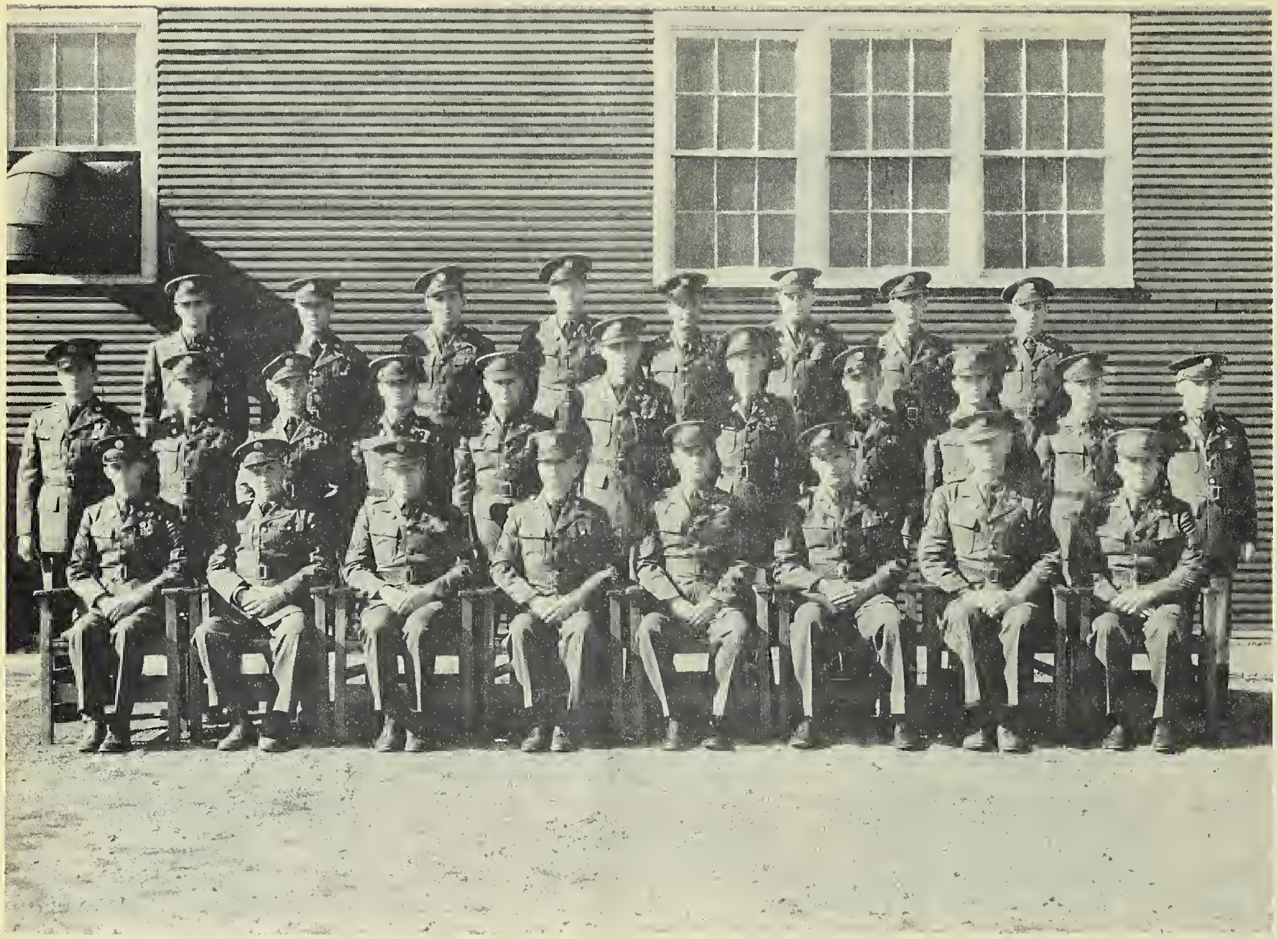
The general organization of the department is somewhat similar to that of the Engineering Department of an Air Depot. A central office maintains all records and reports and handles all administrative matters; whereas, the school buildings and actual instruction is divided into four (4) sub-departments or divisions namely: Airplane Division, Power Plant Division, Machine Shop Division and Parachute Division, the details of which are defined in subsequent articles. The personnel of the department consists of four (4) officers, approximately thirty (30) enlisted men and twenty (20) civilian instructors.

The applicatory system of instruction is practiced in so far as possible, therefore the school rooms consist primarily of shops and laboratories with merely sufficient class rooms for conducting lectures, demonstrations and examinations. Approximately three-fourths of the total time allotted for instruction is devoted to actual work in the shops and laboratories and one-fourth to class room instruction. The percentage of class room instruction for officers' courses is necessarily somewhat higher than this. The nature of work conducted in the shops and laboratories consists of approved methods of repair, adjustment, test, and operation of various aircraft units; whereas, the class room instruction consists of the principles of construction and operation of these units and the reasons for performing work as prescribed. Class room instruction also includes the application and use of all technical publications, drawings, etc., and mechanics of handling equipment and supplies.

The Program of Training conducted by this department varies annually, depending upon the needs of the service. During the ensuing school year a total of approximately fifteen (15) officers and six hundred and fifty (650) enlisted men will be trained in nine (9) different courses, a brief outline of which follows:

1. Airplane Maintenance-Engineering Course.- a. Purpose. To instruct and train officers in the construction principles, repair, maintenance, and inspection of airplanes, airplane engines, and auxiliary appliances; the operation, repair and maintenance of shop and hangar equipment; and in the duties of an Air Corps Engineering Officer.

b. The duration of this course is ten months long and includes instruction in Machine Shop Practice; Metal Shop Practice; Airplane Construction and Repair; Airplane Propellers; Airplane Instruments; Engine Construction and Repair; Airplane Electrical Systems; Engine Induction Systems,



Enlisted Personnel, Department of Mechanics

Front Row - Left to Right: Sgt. S.H. Bishop, Instr. Parachutes; S.Sgt. E. J. McClellan, Instr. Dope & Fabric; S.Sgt. W.M. Grady, Instr. Airplane Repair; M.Sgt. G.P. Stanaland, Sr.Instr. Parachute Div.; M.Sgt. O.K. Lee, Instr. Airplane Repair; S.Sgt. L.T. Burval, Instr. Welding; S.Sgt. G.A.L. Genoway, Chief Clerk; S.Sgt. B.H. Litten, Parachute Rigger.

Middle Row - Left to Right: Sgt. F.J. Leonard, Instr. Airplane Inspection; Pvt. J.E. Ball, Instr. Sheet Metal; Corps. D.E. Erwin, Instr. Ignition; Corp. L.E. Mayea, Instr. Sheet Metal; Sgt. H. Anderson, Parachute Rigger; Sgt. G.E. Cain, Instr. Ignition; Corp. V.E. Botkin, Supply; Sgt. F.W. Leary, Instr. Carburetion; Sgt. C.P. Hamilton, Instr. Carburetors; Pvt. H.P. Robbins, Clerk; Pvt. F.V. Garbich, Instr. Ignition.

Rear Row - Left to Right: Corp. E.H. Farr, Instr. Propellers; Pvt. C.H. Short, Instr. Engine Testing; Pvt. W.F. Gorsage, Machinist; Pvt.1cl J.F. Holliday, Instr. Machinist; Pvt. B.L. Minton, clerk; Pvt.1cl G.F. Tate, Instr. Instruments; Pvt. M. A. Zeiger, Instr. Airplane Inspection; Pvt. R.C. Moore, Clerk.

Fuels and Lubricants; Engine Operation and Testing; Airplane Assembly; Parachutes; Airplane Maintenance and Inspection; Air Corps Maintenance-Engineering System; Auxiliary Equipment Installations and Inspection Trips, and Instructions in Preparation of Efficiency Reports. Total number of hours: 1266.

2. Airplane Mechanics' Course.- a. Purpose: To train enlisted men in the general construction principles, minor repair, adjustment, inspection and maintenance of the complete airplane, engine, and affiliated equipment; also the care and use of material, tools and equipment used in the hangar.

b. The duration of this course is twenty weeks for assigned men, and twenty-four weeks for unassigned men. The course includes instruction in Airplane Construction and Repair; Airplane Propellers; Airplane Instruments; Engine Construction and Repair; Airplane Electrical Systems; Engine Induction, Fuels and Oil Systems; Engine Operation and Test; Airplane Assembly, and Airplane Inspection and Maintenance. In addition, unassigned men receive four weeks additional instruction in the Department of Basic Instruction. Total number of hours: Assigned Men, 600; unassigned men, 720.

3. Aircraft Machinists' Course.- a. Purpose: To instruct and train selected enlisted men in general machine work, forging and heat-treating.

b. The duration of this course is twenty weeks for assigned men, and twenty-four weeks for unassigned men. The course includes instruction in Lathes; Milling Machines and Shapers; Forging and Heat-Treating, and Grinding Machines. Unassigned men receive four additional weeks instruction in the Department of Basic Instruction. Total number of hours: Assigned men, 600; unassigned men, 720.

4. Aircraft Welders-Sheet Metal Workers Course. - a. Purpose: To instruct and train selected enlisted men in oxy-acetylene welding, construction and repair of metal aircraft structural units, aircraft sheet metal work and radiator repair.

b. The duration of this course is twenty-four weeks for assigned men, and twenty-eight weeks for unassigned men. This course includes instruction in Basic Sheet Metal Work; Airplane Metal Work; Heat-Treating; Basic Welding and Aircraft Welding. Unassigned men receive four additional weeks instruction in the Department of Basic Instruction. Total number of hours: Assigned men, 720; unassigned men, 840.

5. Parachute Riggers Course. - a. Purpose: To instruct and train selected enlisted men in the construction, repair, maintenance, and inspection of parachutes and parachute equipment used by the Air Corps.

b. The duration of this course is eight weeks, and includes instruction in Parachute Construction and Repair and Parachute Maintenance and Inspection. Total number of hours: 240.

6. Propeller Specialists' Course. a. Purpose: To train especially selected enlisted men in the construction, operation, repair and maintenance of propellers, and the operation of equipment in the Air Base Propeller Shop.

b. The duration of this course is six weeks and includes instruction in Airplane Propellers (Basic) and Airplane Propellers (Advanced). Total number of hours: 180.

7. Instrument Specialists' Course. a. Purpose: To train especially selected enlisted men in the construction, operation, repair and maintenance of airplane instruments and the operation of equip-

ment in the Air Base Instrument Shop.

b. The duration of this course is six weeks, and includes instruction in Airplane Instruments (Basic) and Airplane Instruments (Advanced). Total number of hours: 180.

8. Electrical Specialists' Course.
a. Purpose: To train especially selected enlisted men in the construction, operation, repair and maintenance of airplane electrical units, and the operation of equipment in the Air Base Electrical Shop.

b. The duration of this course is eight weeks, and includes instruction in Airplane Electrical Systems (Basic and Advanced). Total number of hours: 240.

9. Carburetor Specialists' Course.
a. Purpose: To train especially selected enlisted men in the construction operation, repair and maintenance of engine induction, fuel and oil systems and the operation of equipment in the Air Base Carburetor Shop.

b. The duration of this course is six weeks, and includes instruction in Induction, Fuel and Oil Systems (Basic and Advanced). Total number of hours: 180.

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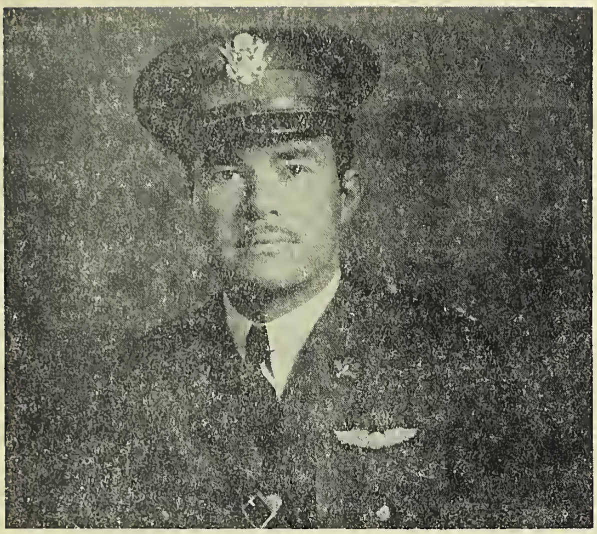
THE AIRPLANE DIVISION

The Airplane Division includes a number of instructional units organized for training students in Airplane Maintenance-Engineering (Officers), Airplane Mechanics (enlisted men) and two Specialists' courses (enlisted men). The primary purpose of the division, is to teach the principals of operation, inspection and maintenance of the entire airplane and its auxiliary equipment, excepting Armament, Radio and Photographic equipment. This does not include instruction in the power plant and accessories, but does include the installation of this equipment in the airplane.

The units or branches into which the division is divided, closely simulates the organization of a Repair Depot, but instead of the output being airplanes, as is the case in the Depot, here the airplanes and accessories remain stationary in the various branches and the men (students) move on from branch to branch and finally emerge from the Inspection Branch as embryonic engineers and mechanics. Each of the branches are equipped with the latest and best of tools and equipment available in the Air Corps, and continuous stress throughout all branches is placed upon the selection of the correct tools and equipment for the many airplane maintenance problems, so as to produce the best efficiency and safety. The elementary, but very important phase of how to care for these tools and equipment, is also stressed throughout the Division.

The introductory subject in the Airplane Division is a study of the general principals of the Air Corps inspection system as basically outlined in Technical Order 00-20. This is taught first because, as the student progresses through the various units or branches, he is taught the detailed inspection and maintenance requirements on the portions of the airplane, or its accessories allotted to each branch. He is then taught the whole system of Air Corps Technical Orders; the different classifications, how to use the index, what the Technical Orders consist of, and it is impressed upon him that he will have to refer to them often and diligently. Along with this he is taught the use of Stock Lists, the Parts Catalog (Section IV of each Basic Technical Order Handbook) and the



Captain Hugo P. Rush, Air Corps,
Assistant Director.

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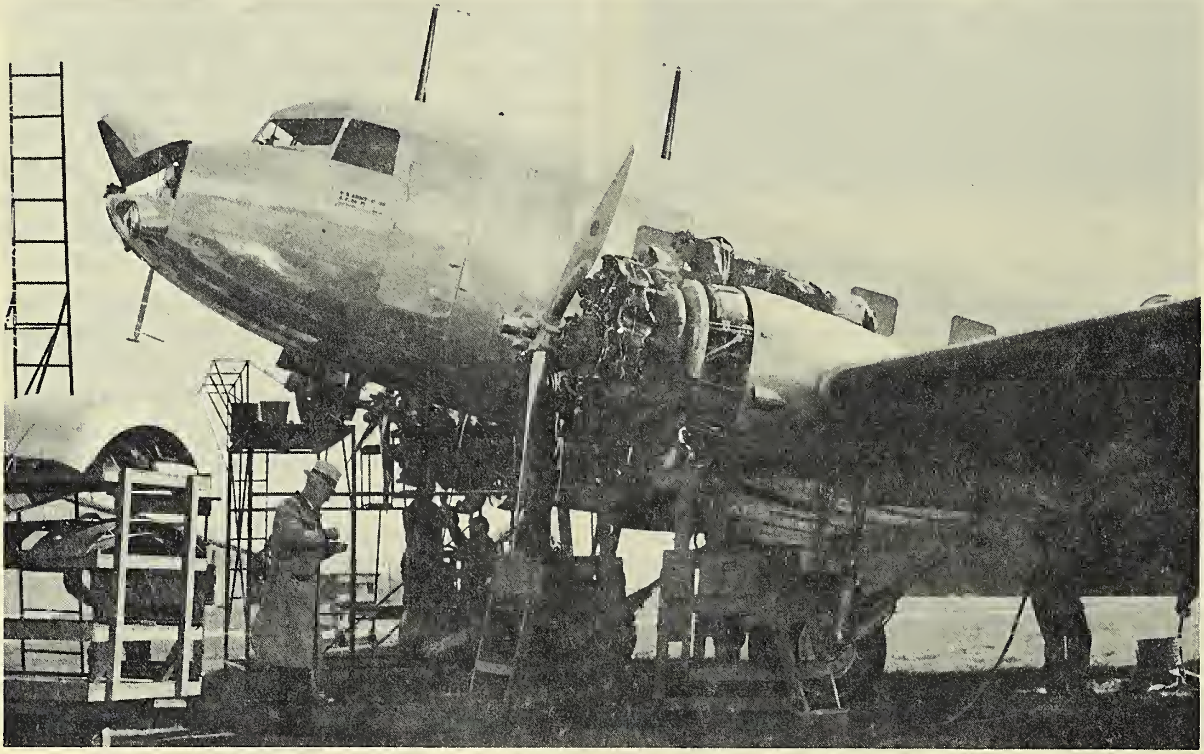
Air Corps Drawings for the purpose of identifying parts, making installations and changes, without a knowledge of which the Engineering Officer and mechanic is lost even though well qualified otherwise. The proper use of A.C. Forms 81 and 82 (Stores Charge and Stores Credit) is taught, and henceforth, the student prepares these forms for all supplies and parts drawn or returned during the entire course.

The first shop problem is that of inspecting the fuselage and wing structure of an airplane. At present A B-10B is used for this training. In all instruction in inspection of structures, how to recognize signs of incipient failures, corrosion, deterioration of protective coatings is the primary problem. Next in sequence, is what to do about it. Following this is a study of flight control systems and their inspection and maintenance; then, tail and landing gears, wheels and brakes and a phase recently added which will be greatly expanded and emphasized in the future, hydraulic systems. The basis for the latter is the elaborate system as used in the B-18, one of which is stationed at Chanute Field, and which will be used at times for a part of the instruction in this comparatively new system. Special emphasis is placed upon the inspection and maintenance of wheels and brakes, tail and landing gears and retracting mechanism. The student becomes familiar with the above mechanisms and systems by disassembly and assembly supplemented by study assignments, classroom lectures, and discussions by the instructors. In many cases, mock-ups are provided for demonstration, and in some instances, lantern slides are projected. Malfunctions, adjustments, inspections required by Technical Orders, checking of clearances, tension of cables, and replacement of parts are the points stressed. Repairs requiring machine work are not taught as this work is covered by specialized courses for Base shop men operated in an other division of the department and which is described elsewhere in this issue.

Next, in the usual sequence, comes the training in propellers; then, instruments. These two branches not only train students in Maintenance-Engineering and Airplane Mechanics, but also Specialists. A description of both these branches is also covered separately elsewhere in this issue.

After completing propellers and instruments, the student moves into the Engine Division, and all its branches, and finally returns to the Airplane Division to complete the course. When each class returns, they bring with them three engines which they have assembled and tested. The class is assigned to three airplanes; any three of the following at present: P-26, P-26A, A-17, O-46A, B-10B, BT-2 and P-29. The three engines in the airplanes are removed and those the class brought along with them are installed. During this engine change all instruments and connecting lines are removed, inspected and re-installed; fuel lines are removed, inspected and replaced; the engine section is thoroughly cleaned and inspected; and the entire electrical system is checked. When the engine change has been finished, a complete 40-hour inspection is conducted and recorded on Form 41's, provided in the authorized manner. The airplanes are serviced with gas and oil, placed on the line and the engines operated. Here the pre-flight inspection is taught. At this point, the student has completed a study of the airplane from propeller to rudder and is ready for his final finishing off.

The "finishing off" process consists of a series of 40-hour inspections on the latest types of modern airplanes. This work, in the Inspection Branch, is closely supervised by three enlisted and one civilian instructor who have specialized in airplane inspection for many years. This branch is equipped with the very latest and best equipment procurable for conducting airplane inspections with speed and accuracy. This includes such items as washing equipment, lubricating equipment, portable lights, cleaners, work stands, vacuum cleaners, over-head track, propeller dollies, and the many and various special tools required for propeller, engine and airplane maintenance. The first airplane inspected is a small one, such as, a P-26, PB-2 or BT-9. This is followed by a larger airplane, such as, an A-17A, or O-46A, and the final project is a B-18, C-33 or even a B-17. Since the policy was inaugurated to assign one of each series of modern airplanes to the Air



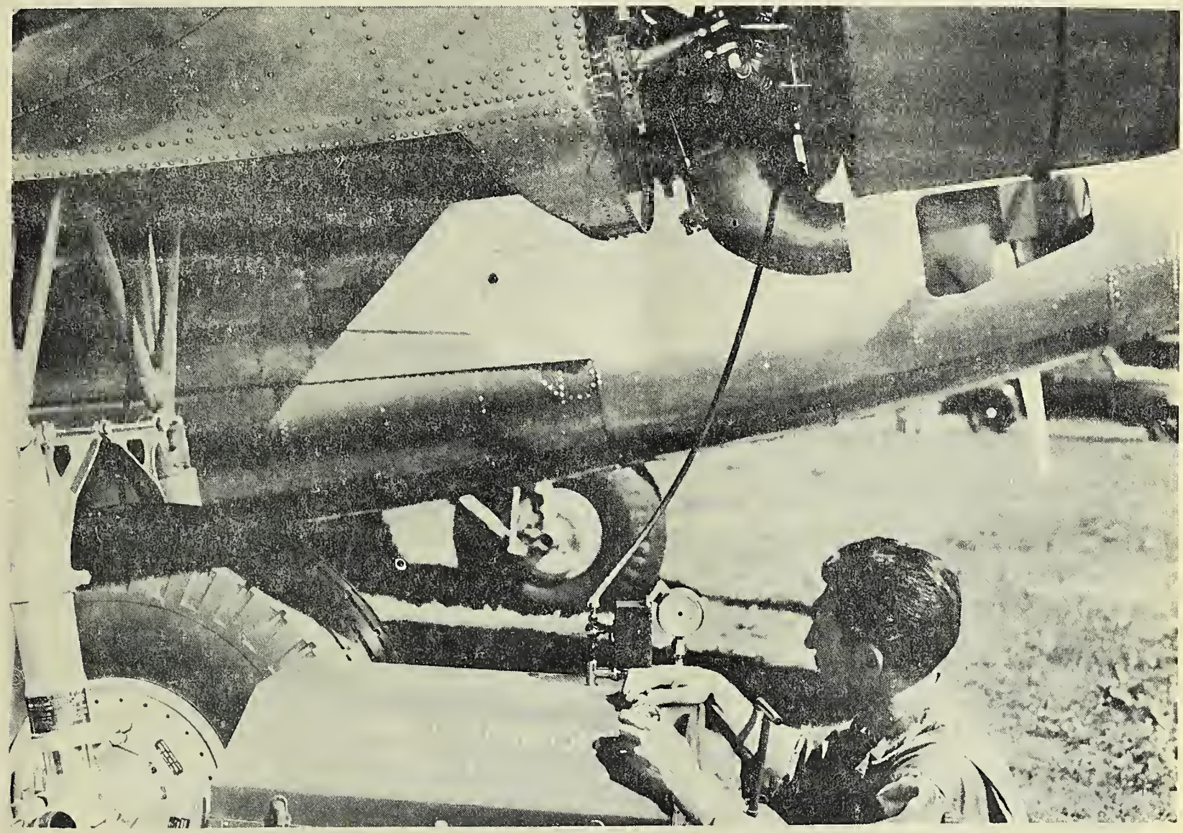
Students performing 40 Hour Inspection on C-33

Corps Technical School, there has been no difficulty in obtaining suitable modern airplanes for this training. Previous, to this time, it was necessary occasionally to borrow airplanes from other stations. This no longer is necessary, but can still be done, if for any reason airplanes are not available. By the time this work is completed, the student has not only the necessary knowledge, but has the confidence that he can make a practical application of same with reasonable efficiency. It has been a long, hard, but very interesting grind, and each student is justly proud of the diploma he receives.

Each branch of the Airplane Division is manned by competent and experienced instructors. One civilian and one or more enlisted instructors are employed in each branch. These men have up to 20 years experience in their own specialty and most of the civilians are ex-service men of war-time experience. It is their unrestricted policy to render conscientious, efficient, and courteous service to the student and the school.

PROPELLER BRANCH

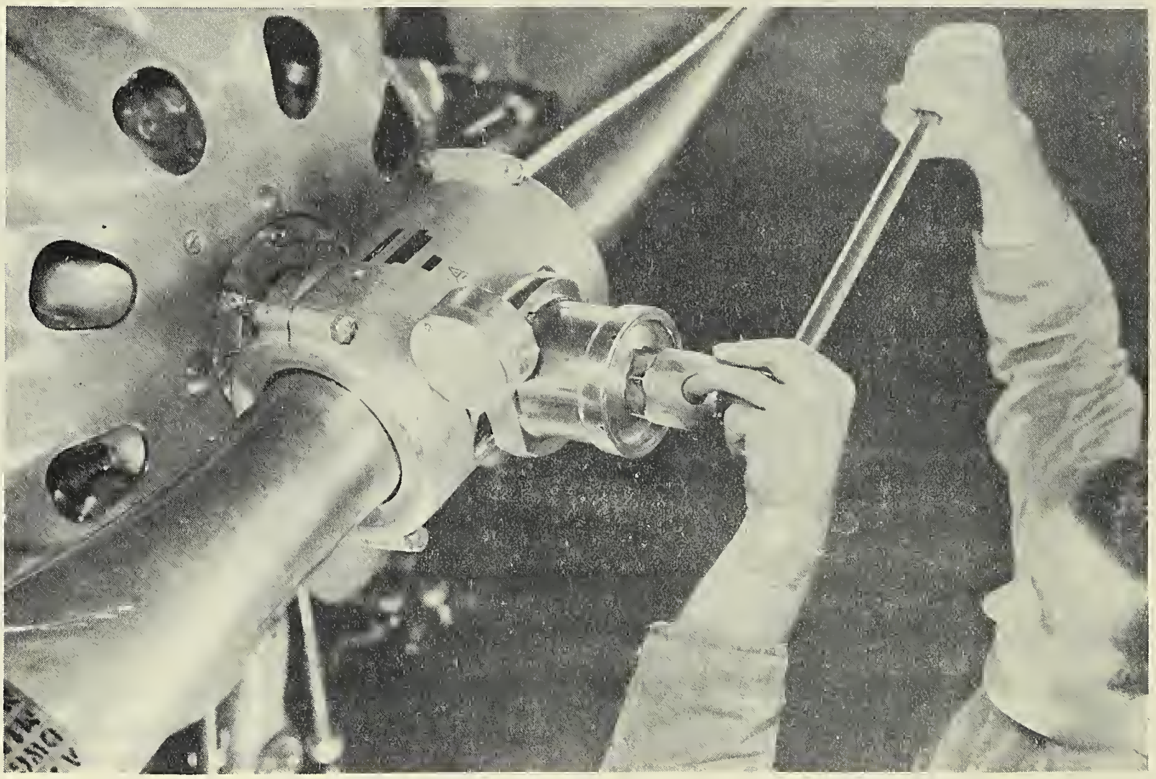
Since the advent of the controllable propeller into the Air Corps, this Branch has become a very important part of the school. It is the function of this branch to acquaint the student with the operating principles of each propeller used in the service, with sufficient shop work to train him for the duties he will be required to perform. The amount of time a student is in this branch depends on whether he is taking a course for Airplane Mechanics or Propeller Specialists; two weeks is allotted the



Checking instruments with Field Testing Set

Airplane Mechanic, while the Propeller Specialist is given six weeks. All work in the shop conforms to existing regulations as outlined in Technical Orders. Theory as applied to propellers is discussed by the instructor in the classroom. He is aided in this by the use of sectionalized models of the different types of propellers and by the actual demonstration of propeller vibration. Theory and classroom discussions have an important place in this branch, as do oral and written tests. From these tests, it is possible to determine whether the student understands that particular phase of the work.

the airplane mechanic will be trained to perform shop maintenance or overhaul of propellers. Therefore, their work in the shop is of such a nature that will train them for the duties required in the Service. The most important phase of this branch insofar as airplane mechanics are concerned, is the inspection and maintenance of propellers. The manner and procedure is first demonstrated. Each student is then required to make a similar inspection on each type of propeller. By the time the student reaches this point he has been instructed in the proper nomenclature and function of component parts of the propeller, as well as the assembly and associated operations.

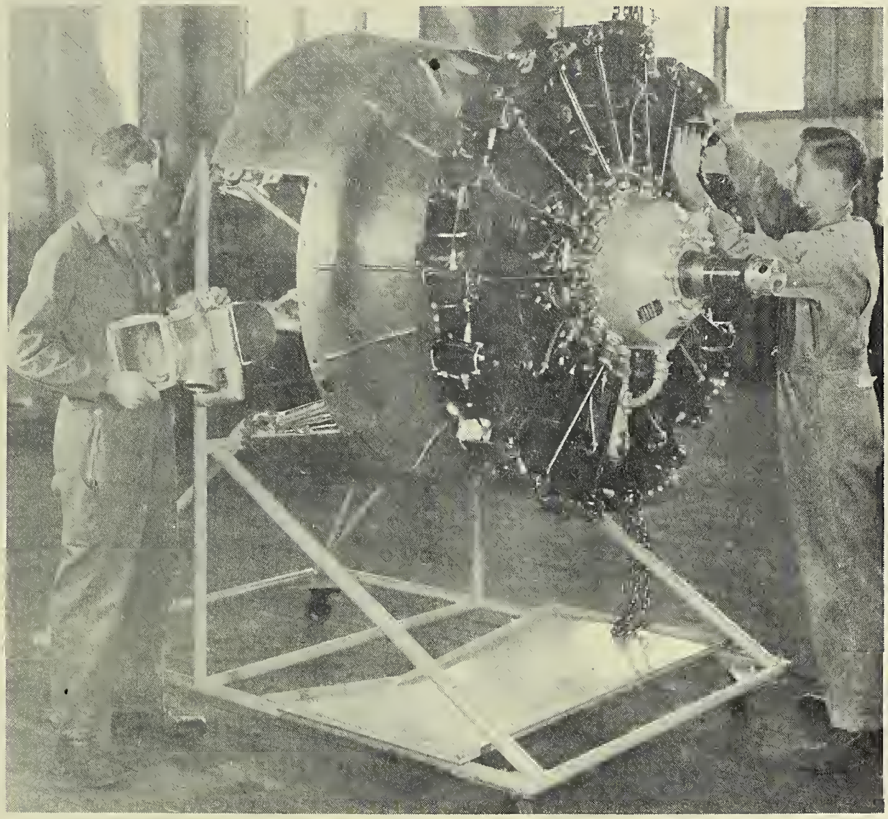


Student checking Propeller

In the shop the students work in groups of three, having modern shop equipment and hand tools at their disposal. The work given here depends again on the course of instruction. For example, it is not intended that

He has then a knowledge of the equipment he is inspecting and the procedure of making an inspection. Checking track and blade angle with a propeller installed is part of the instruction given. Each student checks the blade angle with the Universal Protractor. The different types of propellers are removed and reinstalled under the supervision of the instructor. The importance of this phase is emphasized. On completing the two weeks in this branch, a final examination and proficiency grade is given. If both are satisfactory the student is permitted to proceed in his course.

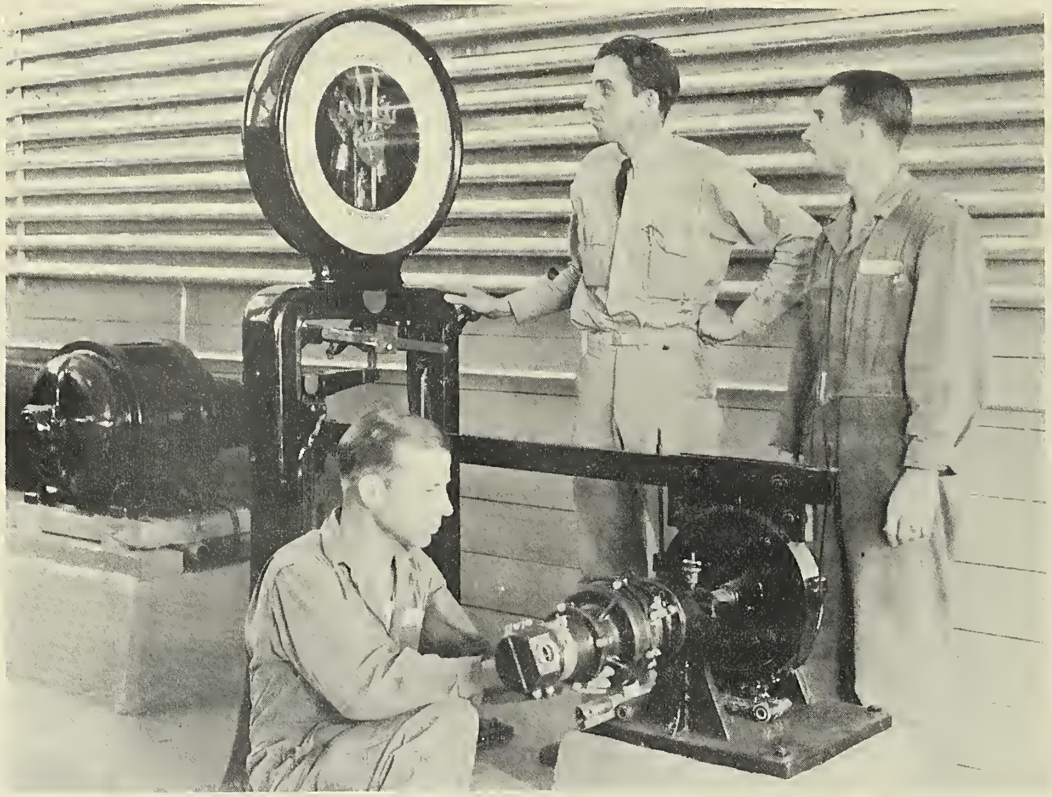
The Propeller Specialists undergo the same instruction as the airplane mechanic the first two weeks of his course. Work in the shop is such that will enable the student to perform an overhaul and repair the different types of propellers. It includes disassembly and inspection of all component parts, either visual or by the magnaflux method. The propeller is then assembled, checked for track, blade angle is set and it is balanced. The finished propeller is checked by the instructor who holds the student to a high degree of accuracy. They are instructed in the use of the special tools required for the different types of propellers.



Students assembling engine and accessories for C-33

Commissioned officers undergoing a course of instruction in Airplane Maintenance-Engineering are given a two weeks period in this branch. These students are trained to supervise any and all work on propellers and to be able to make a decision on the serviceability of a propeller or its parts. The importance of the periodic inspections is stressed as well as the common service troubles and the means of correcting the same is discussed and demonstrated. This information is invaluable to the Engineering Officer.

Briefly the information and instruction given the student in this branch, not only enlightens them on the subject matter, but it also gives him confidence in his own work with the satisfaction of knowing the work performed is the approved method and the results gratifying. This comes from training.



Prony Brake Test

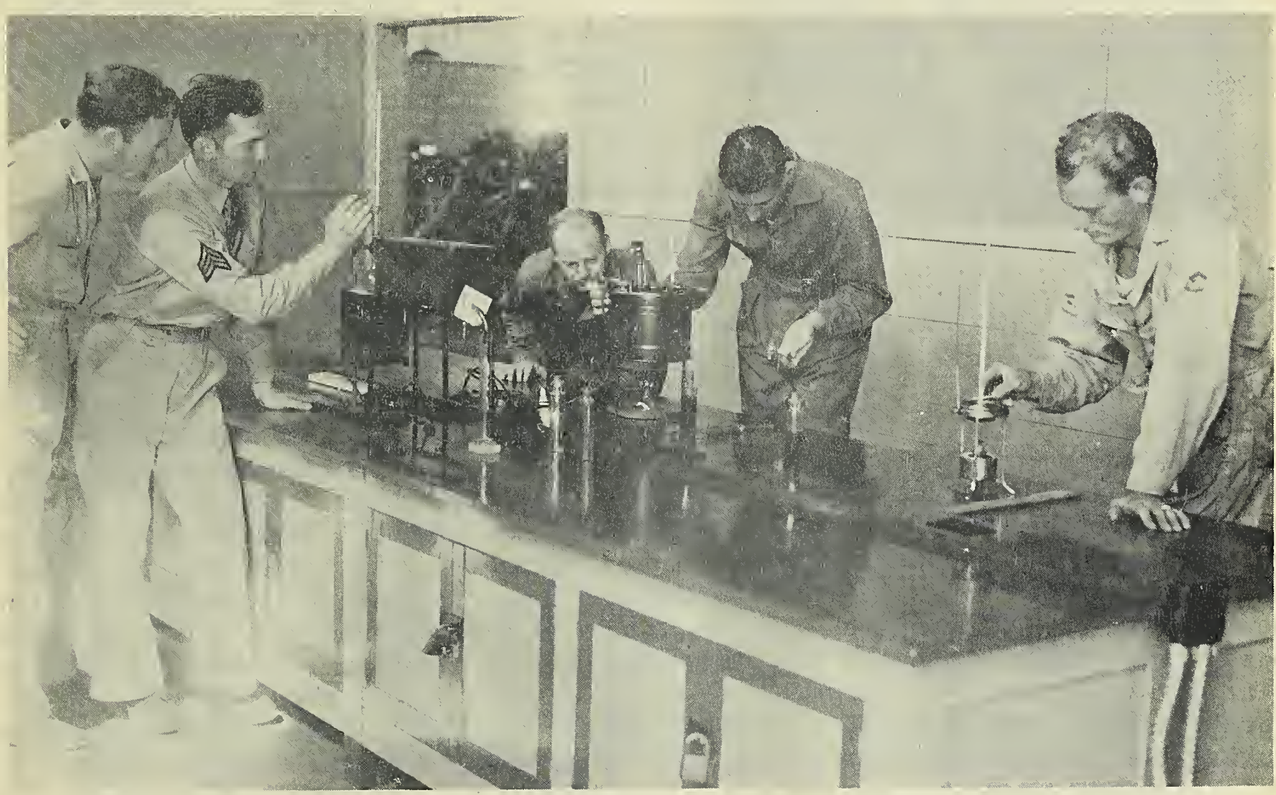
INSTRUMENT BRANCH

Instruction on instruments is considered to be a very necessary part of the training given to the combat crews and maintenance personnel of all airplanes. In this school an instrument laboratory containing all of the standard instruments and their necessary maintenance equipment is available for this training.

Instruction consists of demonstration lectures, laboratory experiments, inspection and installation practice.

Demonstration lectures are given using sectionalized models to first familiarize the student with the purposes, uses, and operating principals of each instrument. This is immediately followed by laboratory experiments in which each student actually operates the instrument under the same conditions as it is subjected to in flight. Each instrument is run up and down through its scale range and the readings at each calibration point are compared with a manometer, a barometer or other equivalent of a master gage. By this means, he learns to correctly read the instruments, learn their limitations, and determine their accuracy. Particular stress is laid on the very close tolerance required in aircraft instrument, he is taught repair practices and procedure, such as present regulations permit in field organizations. This includes cleaning and lubrication of external parts, replacement of broken cover glasses, the sealing of cases, the resetting of dials and pointers, the use of zero adjusters and minor adjustments of internal parts. Following the minor repair of an instrument, it is then given a scale error test and such other special tests as are required to determine without a doubt that it will function correctly on an airplane, under flight conditions.

Following the laboratory instruction each class is assigned to school airplanes and are taught the inspection procedure and maintenance required at periodic intervals on service airplanes. The portable field test set is used for this instruction. Emphasis is placed on the necessity of correct and proper installation of instruments. Installations and discussion of such defects as sharp bends, fouled lines, leaks restrictions and improper fittings are given so that the student is lead to the realization that perfection is the only standard that is acceptable for any instrument that is installed on an airplane.



Fuel and Oil Laboratory Testing

Approximately thirty basic instruments with their respective variations are covered in the course of instruction. This includes all the standard engine and flight instruments and very recent developments such as the automatic pilot, exhaust gas analizers, autosyn and other new types of electrically operated instruments. Graduates are competent to perform the necessary instrument maintenance and repair required in squadron, group and Base Engineering units of service organizations in the Field.

THE POWER PLANT DIVISION

1st Lieut. R. J. O'Keefe, Air Corps,
Assistant Director.

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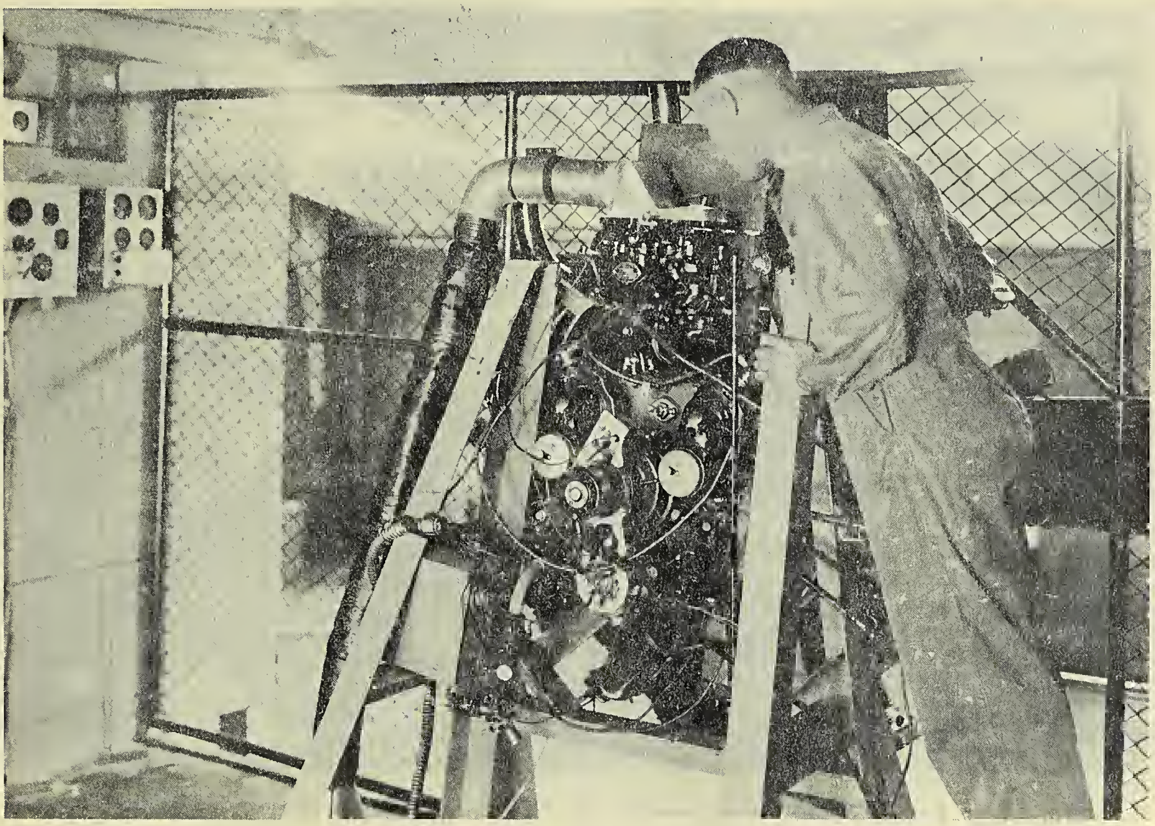
The human body is the most perfect mechanism devised by nature. Analogously, the power plant and the related equipment of the modern airplane is the most perfect mechanism devised by man. Figuratively, the power plant must be treated with similar discretion and care prescribed for the human body in order to perform, during its life span, the purpose for which it was intended. Both of these mechanisms are capable of withstanding abuse and mistreatment; however, there is always a day of reckoning. Whereas one mechanism maintains and repairs itself with very little assistance, the other is dependent for its very existence upon the ability and care of that man affectionately called "The Greaseball". The power plant is the heart of the airplane; the operator is the brain; the fuel and oil is the food and drink; the time between overhauls is the useful life; the mechanic is the physician and surgeon. The mechanic - the "Doctor", is a major cog in the intricate organization of the Air Corps. He doesn't fly an airplane, but it can not fly without him. He treats and maintains a power plant at such a high standard that every available horsepower may be "nursed" out of the equipment with a high degree of reliability. This division, within the limits of its ability, endeavors to carry on a course of instruction which trains student mechanics capable of performing such an important mission.

METHOD OF INSTRUCTION

The objective of this instruction is to impart to the student mechanic the knowledge necessary to efficient maintenance and repair of the power plant and related systems. This objective is accomplished by instructing the student in construction, operating principles, and proper maintenance of the pertinent equipment. A high degree of efficiency in a mechanic will insure a high degree of reliability in the operation of the airplane. An effort is made to confine theory to a minimum and practical application to a maximum; however, theory is covered in detail when necessary to an understanding of just what the equipment does, how its useful work is accomplished, and the means and methods used to maintain a high standard of performance. School texts and technical publications are given to the student for study outside of classroom and shop, and for a guide in the classroom and shop. Numerous lectures supplement the study and practical application for a better understanding of the subject.

SECTIONALIZED UNITS AND DEMONSTRATIONS

The intricacies of operating machinery are usually mysteries to the student until the equipment has been totally dismantled. Where complete disassembly does not permit complete understanding, "cut-away" or sectionalized units are utilized to expose hidden complexities. The mystery is a mystery no longer and is exposed in all its nakedness to be just a simple operation or effect. For example, sectionalized carburetors, superchargers, pumps, cylinders, magnetos, valves, etc., are used. The student is given a detailed explanation of carburetor icing. To supplement the explanation he observes through a glass window the actual formation of ice in a carburetor installed on an operating engine. The carburetor icing conditions are introduced at will on the engine test stand where the student sees the ice form and then disappear as the carburetor heat control is operated. He not only knows how the ice forms, but he sees the formation and observes the effect on engine performance. Detonation is demonstrated on a one cylinder gasoline engine to supplement the classroom explanation of the phenomenon. Aircraft engine instruments are used to give the student the identical indications he would encounter in a detonating aircraft engine. He is instructed in the cause, observes the effect, and learns how to use the available means of preventing detonation which has become a serious problem in present-day highly supercharged aircraft engines. From the above, it is obvious that sectionalized units and demonstrations tend to simplify an otherwise complex subject.



Carburetor Icing Demonstration

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KEEPING UP-TO-DATE

Close contact with the Materiel Division, Air Depots and the manufacturer enables the instructors to pass on to the student the development of experimental equipment, maintenance and repair information, and factory methods of construction. The value to the student of this close contact is undoubtedly beneficial because the information procured is as up-to-date as is humanly possible. Such information permits the instructor to advance his knowledge with the development of the power plant which has progressed very rapidly in the last few years, and from all appearances will progress with even greater rapidity in the future.

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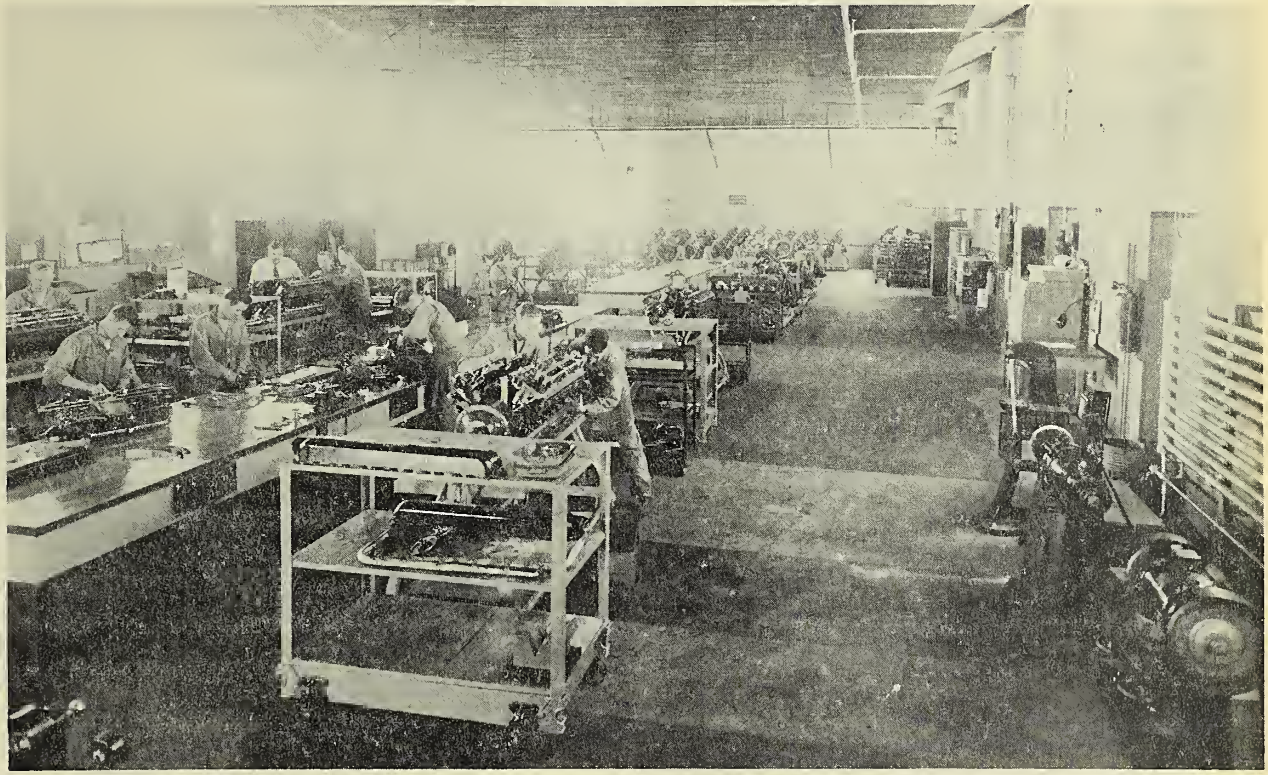
THE PHASES OF INSTRUCTION

The instruction in the Engine Division is divided into four phases, i.e., Engine Construction and Repair; Electrical Systems; Fuel, Oil and Induction Systems; Engine Operation and Test. The airplane mechanic covers the four phases in approximately eleven weeks. In addition to the airplane mechanics course, two specialist courses are given in Fuel, Oil and Induction Systems and Electrical Systems of six and eight weeks respectively. Engineering Officers take the eleven week mechanics' course and cover practically the same ground as that prescribed for the enlisted mechanic. A short course of four weeks is given to National Guard and Reserve Engineering Officers during the summer months. From the above it can be seen that the Engineering Officer

Student inspecting and greasing tail wheel bearings on 0-46 receives the training necessary for his understanding of the problems and difficulties confronting the mechanic in the maintenance and repair of the aircraft power plant.

ENGINE CONSTRUCTION & REPAIR

This phase of the instruction is divided into two separate sections, namely, liquid-cooled and air-cooled engine construction and repair. Modern liquid-cooled engines are used in the work shop and are completely torn down and checked. The necessary maintenance and repair of the engine is studied by the student with particular emphasis given to inspection and adjustment. During the process of disassembly the construction of the engine is studied and discussed. Coolants and cooling systems are covered thoroughly at this time. Modern single row and double row radial air-cooled engines follow the same procedure described above, except in the amount of time spent on the subject due to the present preponderance of air-cooled radial engines used in the "Service". At the close of this phase of the course the engines are adjusted and inspected and prepared for installation on the test blocks where they will be used in the last phase of instruction covering operation and engine test.



Engine Construction & Repair

FUEL, OIL & INDUCTION SYSTEMS

This phase of the instruction is divided into five sections; namely, fuel and lubricant laboratory testing; carburetors and carburetion; fuel injectors and fuel injection, fuel and oil systems;

oil reclamation. Laboratory work consists of the standard tests required by the Air Corps of all fuels and lubricants used on an airplane. The chemistry of fuels and lubricants is covered for a better understanding of their utility. The operation of carburetors, fuel injectors, superchargers, and fuel and oil system units are covered thoroughly. The operation and maintenance of an oil reclamation plant is included in this phase. The operating and maintenance of these complete systems as installed in the airplane complete the course during this phase of the instruction. Frequent demonstrations during instruction supplement the classroom and shop work of the student.

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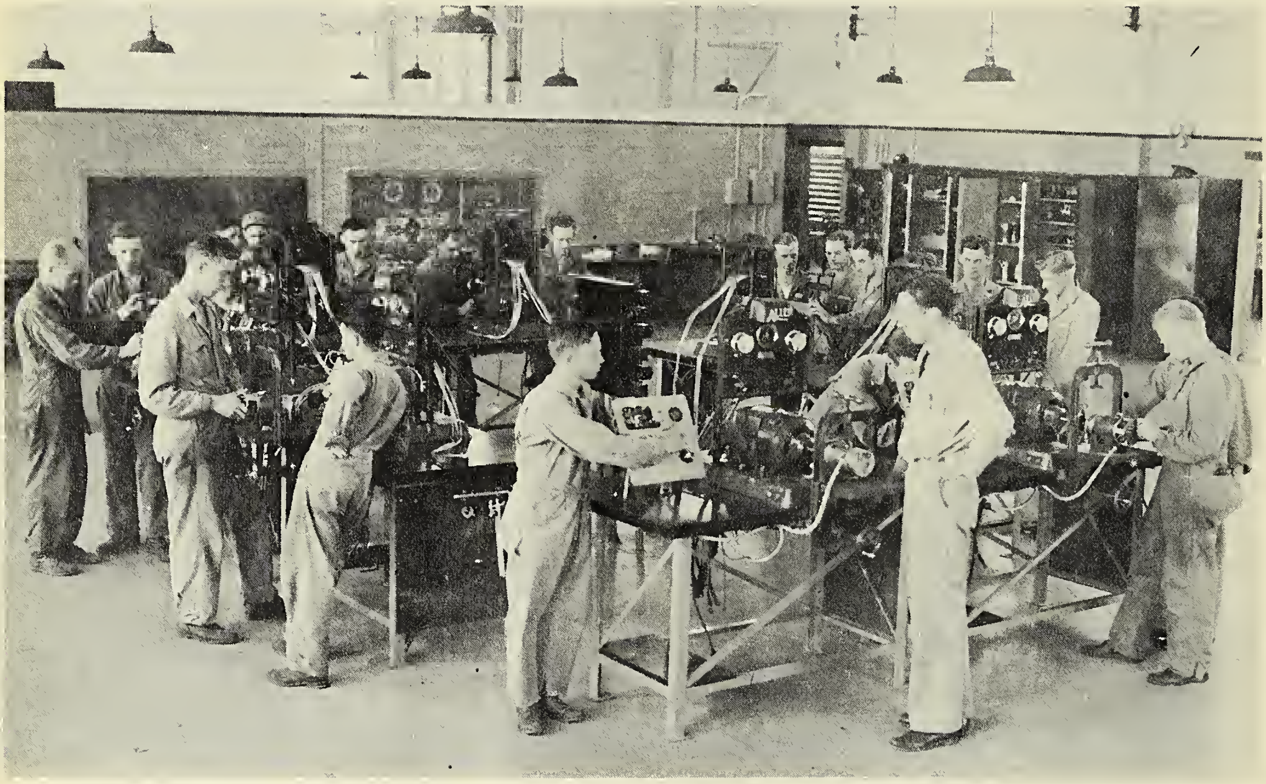
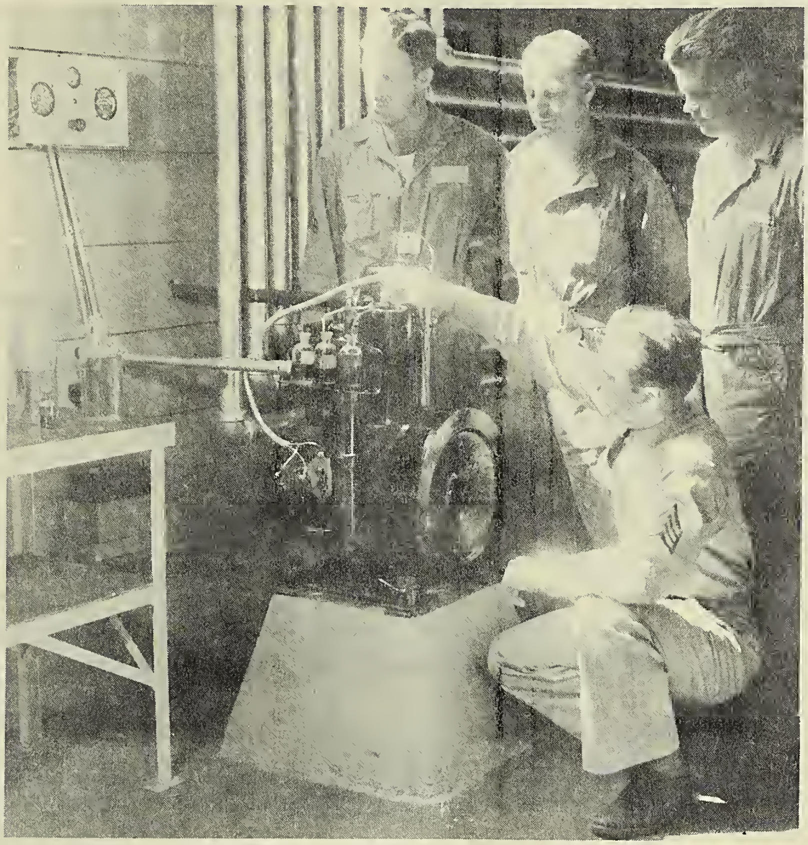


Electrical Test Stands

ELECTRICAL SYSTEMS

This phase of the instruction is divided into two sections; namely, power plant electrical systems and airplane electrical systems. The instruction in power plant electrical systems consists of test, maintenance and repair of the battery; generator and control system; starter and starter system; ignition system and bonding; shielding and metallizing. The instruction in airplane electrical systems consists of test and maintenance of the electrically operated airplane equipment such as cowling flaps, landing gear, lighting system, propeller, etc. The student is taught how to check the electrical equipment while it is installed in the airplane when such a check is practicable in "trouble shooting". Complete airplane and power plant electrical wiring and installation drawings are utilized for study and shop work to familiarize the student with the interrelated individual electrical units and how to "check out" any part of the electrical system by the use of the "voltage-drop" method of test. The instructor introduces "trouble" into the power plant and then teaches the student how to determine logically its elimination. A systematized method of "trouble finding" is taught to facilitate the location of any malfunction in a minimum length of time. The procedure of treating an



Detonation Demonstration

ENGINE OPERATION AND TEST

This phase of the instruction is divided into four sections, namely, engine operation, engine test, power plant "trouble finding", and engine storage and shipment. The instruction in operation includes engine starting, engine "warm-up", engine check, the operation of the power plant during flight, and engine "shut-down". The student is instructed in test block procedure and the conclusions to be drawn from this engine for storage and shipment is covered in detail. This terminates the course of instruction given the airplane mechanic during his short stay in this division and it is thoroughly believed that he is competent to take his place in the service as an embryo mechanic who needs only the actual experience necessary to his full development.

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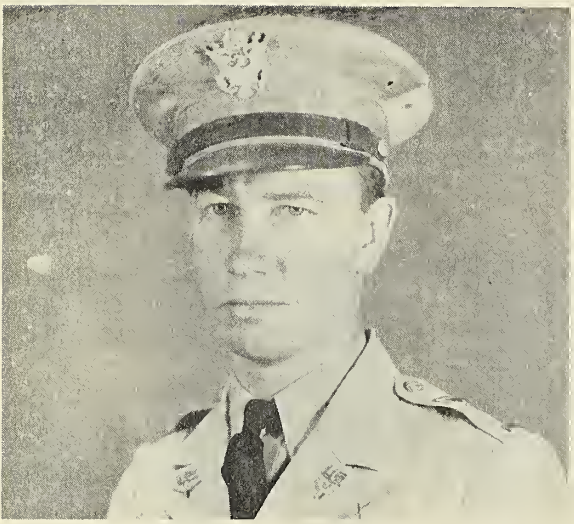
MACHINE SHOP DIVISION



1st Lieut. William P. Sloan, Air Corps, Assistant Director.

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The primary mission of this division is to thoroughly train enlisted aircraft machinists, aircraft welders, and aircraft sheet metal workers for duty in Base Repair Shops maintained at Air Corps stations. In addition, each class of Regular Army officers taking the Maintenance-Engineering course is given two months or approximately 240 hours of practical shop instruction.

In their two months in this division, the officers' class is given instruction in Lathe Operation, Milling Machines and Shapers, Heat-treating, Precision Grinding, Airplane Sheet Metal Work and Aircraft Welding.

During the two weeks of lathe operation, the officer starts a series of exercises designed to give him experience with each type of work normally performed on a lathe. Additional operations such as fluting reamers, gear cutting, cutting heads on special bolts, and forming Vee blocks are performed on either the milling machine or shaper during the week allotted to that subject. The exercises are then ready for heat-treatment before being finished by grinding.

During the half week allotted heat-treating, instruction is given in all methods of heat-treatment used by the Air Corps and their application to the various metals and alloys used in aircraft construction. At this time, the exercises started in the Machine Shop are heat-treated preparatory to their final completion.

All of the exercises that require a very fine or accurate finish are ground to the desired size and finished during the student's last week in the Machine Shop.

The next step in the Engineering Officer's training is aircraft sheet metal work. In this section, he learns the kind of metals and alloys used in aircraft fabrication, and their uses and limitations are emphasized, both in classroom and shop work. The shop work consists principally of the fabrication of small aircraft parts from sheet metal and the repair of school airplanes. Many of the articles manufactured in this section require welding or silver soldering for completion and are taken to the Welding Shop by the student.

In the welding section the student makes practice welds on all weldable metals and alloys used by the Air Corps until he becomes sufficiently proficient to complete the exercises started in the sheet metal section. Inspection of welds for quality and the proper use and limitations of welding in aircraft repair is particularly emphasized. At this time the student officer has completed two months of training in the Machinists Division of the Department of Mechanics and is transferred to the Airplane Division.

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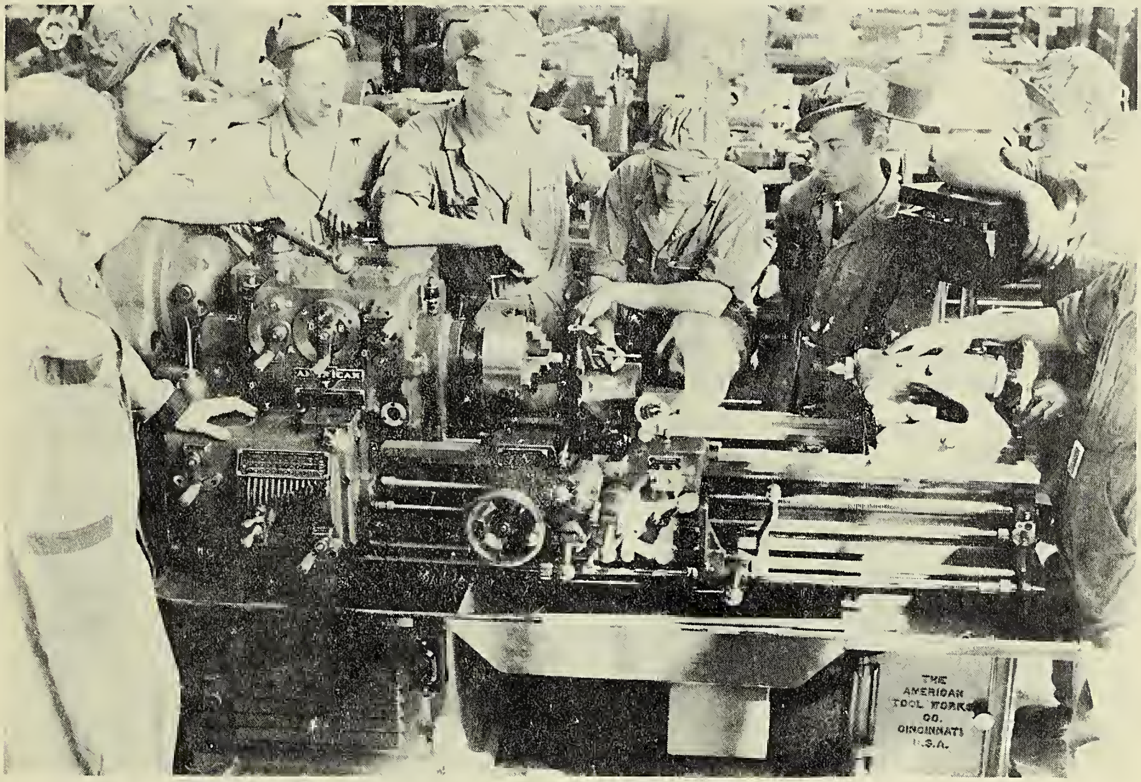
The enlisted student entering this Division selects either the Aircraft Machinists' course or the Aircraft Welders-Sheet Metal Workers' Course. Both of these courses are highly specialized and are arranged to fit the student for one particular job in the Base Repair Shop. Both courses for enlisted men, cover in general, the same instruction given the Engineering officer student, but are far more detailed and exacting. The objectives of these courses are to train the students to a degree of proficiency that will enable them to produce an excellent grade of work on returning to their home station.

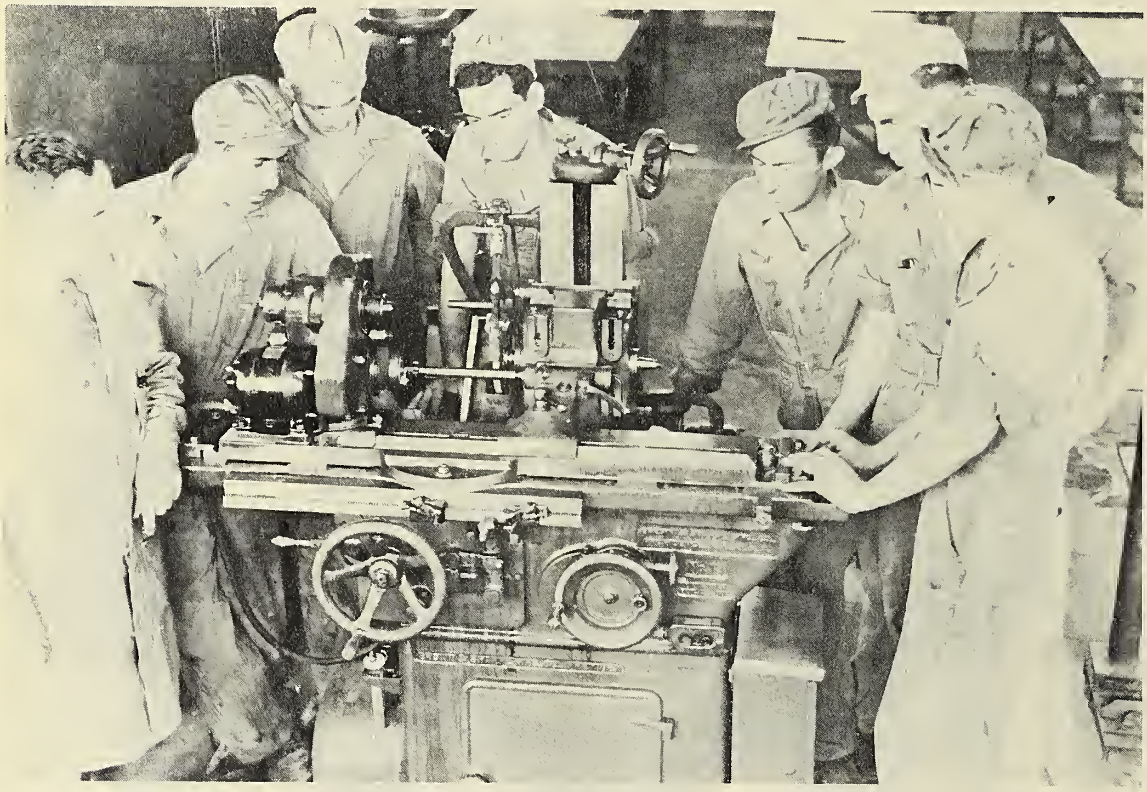

AMERICAN
THE AMERICAN TOOL WORKS CO. CINCINNATI U.S.A.

Demonstration: Lathe Work

The Machinists' course requires twenty weeks or approximately 600 hours to complete. This time is allotted to the four general subjects in Lathe Operation; Milling Machines and Shapers; Forging & Heat-Treating, and Precision Grinding.

In the lathe operation course the student is first started out with demonstrations of correct methods of operation and procedures. Following each demonstration he is given practice exercises designed to make him proficient in all lathe operations used in aircraft repair and maintenance of Air Field equipment. As soon as his progress permits, the student is given work orders received from other divisions and is thus given every possible opportunity to manufacture parts and equipment for flying airplanes.

Normal progress finds the student starting work on milling machines and shapers at the beginning of his ninth week in school. Instructions in this phase includes plain, face, end and angular milling, gear cutting, dove tailing, screw slotting, etc. Six weeks of work in this section and the student will have completed a number of projects that will require heat-treatment before they can be finished and will have attained a rather high degree of proficiency in general lathe, milling machine, and shaper operation.



Demonstration: Cylindrical Grinding

Four weeks are devoted to forging and heat-treating. The first two weeks are occupied by forging and the last two by heat-treating. Forge work includes fabrication of tools, the manufacture of hooks, chains, hold-down screws, and welding and repair of equipment. Instruction in heat-treatment of material is for the machinist directed primarily toward the treatment of the metals and alloys that he will use in the machine shop, and in addition, he is given a working knowledge of the heat-treatment of other metals used by the Air Corps.

In the last two weeks the student machinist learns precision grinding, grind finishing, sharpening of special tools, milling cutters, reamers, etc. Extreme accuracy is stressed in this work, together with the proper grade and type of grinding wheel to use for best results, on different kinds of materials. This two weeks completes the instruction and he graduates with a rather thorough knowledge of machine work required in aircraft maintenance and repair; however, due to the short time allotted for the entire course the graduate lacks that knowledge that must be gained only through experience, and experience only. It is therefore desirable that the graduate make every effort to continue in the line of work for which he has been trained for that is the only method whereby he may gain the experience vitally necessary to become a finished machinist.

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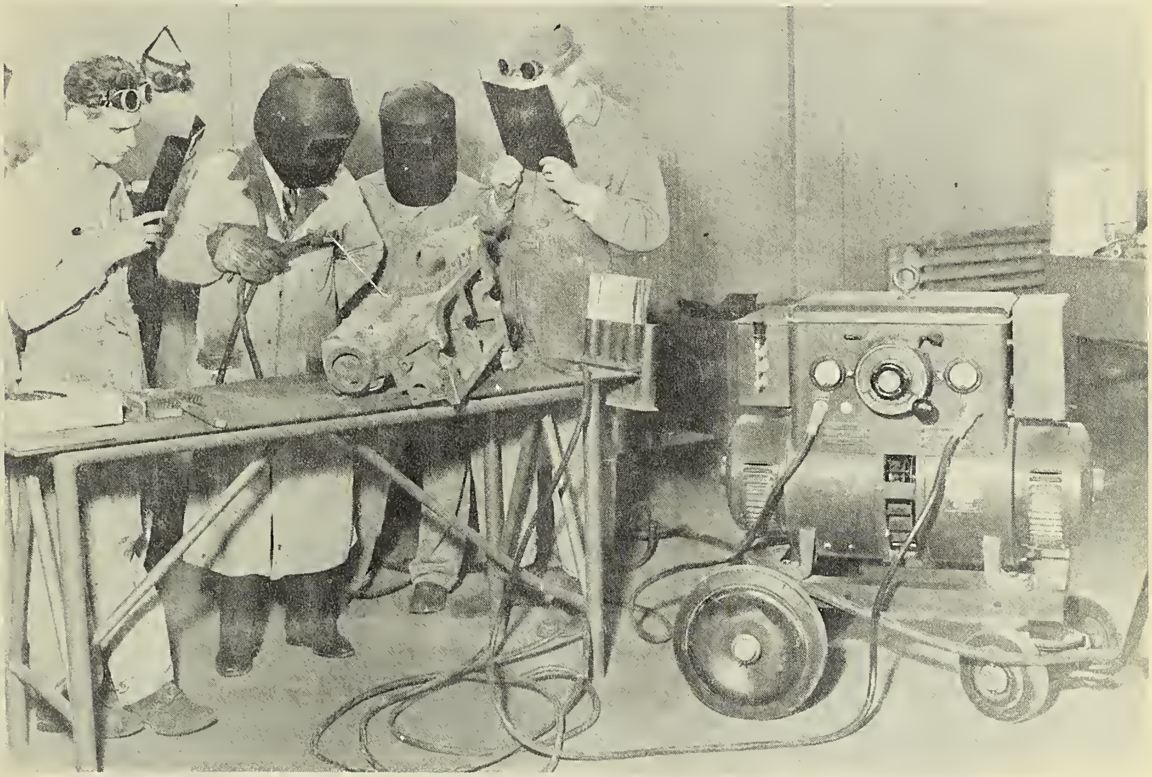
The Aircraft Welders-Sheet Metal Workers' Course for enlisted men requires twenty-four weeks or 720 hours for completion. It is divided into five phases, i.e., Basic Sheet Metal Work; Aircraft Sheet Metal Work; Heat-treatment of Metals; Basic Welding, and Aircraft Welding.

Basic sheet metal work is, as its name implies, designed to teach the student the use of metal forming tools and to make him proficient in their use. Fabrication of funnels, measuring cans, the forming of seams and splices, soft soldering and cable splicing are among the exercises used in this phase of the course.

The seven weeks devoted to aircraft sheet metal work are spent entirely on that subject. The early part of this phase is spent in the repair and fabrication of cowlings, exhaust manifolds, special brackets, and the repair of cracks and tears in metal covered surfaces and fuselages. The repair and fabrication of small stressed parts of the airplane is taught during the latter part of the aircraft sheet metal phase of instruction. The majority of this work is done on wrecked airplanes transferred to this school for training purposes. Strict adherence to technical instructions and the careful selection of the correct material for repairs is emphasized throughout this course



Demonstration: Arc Welding

Heat-treating of the materials used is of prime importance, and while only a week is spent on this subject, its importance is carefully impressed upon the student. Heat-treatment of those particular materials that the sheet metal worker will use is the primary objective of this phase; however, a working knowledge of heat-treatment of other Air Corps specification metals is included.

The Welding Course is divided into Basic or "Primary Instruction" and actual aircraft welding.

In the basic course the student learns the care and operation of standard welding equipment, the use of welding fluxes, the various types of welded joints, and their adaptability to general repair work. In order to learn the quality of his work and proper methods of welding the student makes cross sections of his sample welds and then by polishing and etching he is able to determine whether or not a complete union has been made between the two metals. Further tests are made by actually breaking the test welds under tension and thereby determining the actual strength of the joint. A large amount of practice is given on every type of metal or alloy used by the Air Corps. The student is required to become thoroughly proficient in this "practice or basic" welding before he may pass on to aircraft work.

In aircraft welding the student learns to apply the welding principles and methods learned in basic welding to aircraft repair. The work performed in this phase is confined entirely to exercises representing actual aircraft work, repair on school airplanes so arranged that every practical use of welding in repair work is learned, and where the work is available and the student's proficiency at the time permits, the repair of flying airplanes. Special emphasis is placed on the limitations of welding

Class in Basic Welding

in repair, and in this connection, the student must definitely know what materials cannot be successfully welded and the reasons therefor.

Again as in the Machinists' course too much emphasis cannot be placed on the desirability of our graduates being assigned to the work for which they were trained as soon as possible after graduation. Experience, following a thorough training in the fundamentals of the work, is without any doubt the best of all teachers, and time limitations here do not permit us to give the graduates the desired amount of experience. The graduate should make every effort to follow up his training with actual experience for in so doing, and by diligent application of his school training, he has every opportunity of becoming an expert in the work he has chosen.

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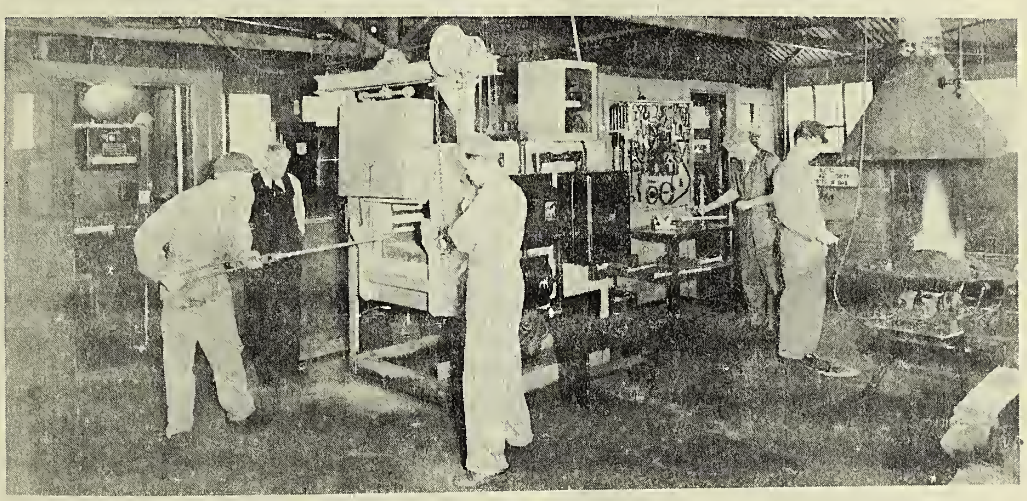
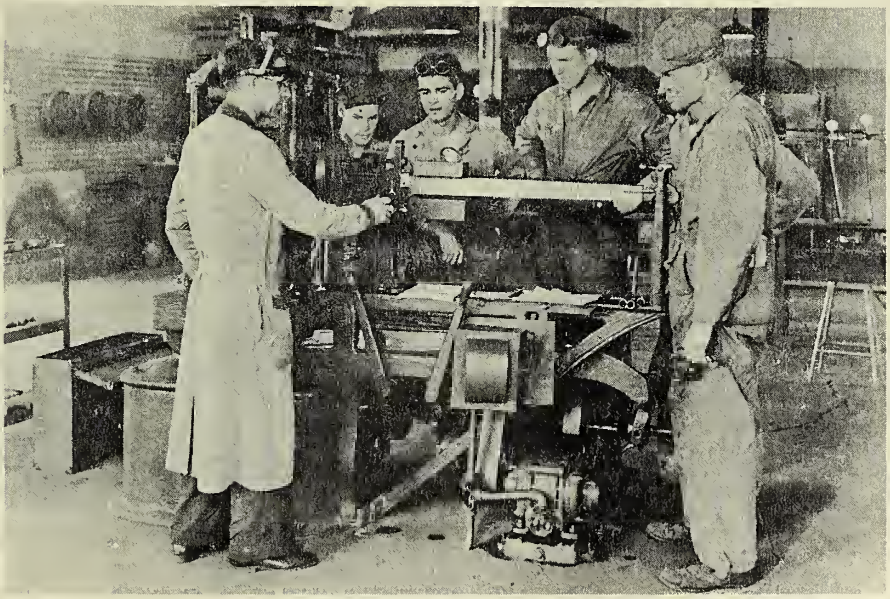


Class in Heat Treating



Testing the strength of a Welded Tube

THE PARACHUTE DIVISION

The Parachute Division is charged with the responsibility of conducting the course for Parachute Riggers and in this division the student officers pursuing the Airplane Maintenance-Engineering course spend two weeks in the latter stages of their training, where they become highly proficient in the various technical details pertaining to the parachute in general.

Any discussion of the Parachute Riggers' course, and the importance attached thereto, would be incomplete if the caution with which prospective candidates for this course are scrutinized was not made clear at the outset.

As this course is only two months in duration and the technical details involved in the study of parachutes is comparatively simple, it naturally recommends itself as one in which a soldier can get a diploma in a hurry. Since the parachute game is one in which a 100% performance is required and mistakes are absolutely not alllowed, it is of paramount importance that men assigned to take this important training must, first, be of the type who can be thoroughly depended upon and, second, possess a high degree of mechanical skill.

In order to be eligible for enrollment in the Parachute Riggers' course, Army Regulations provide that applicants must have been graduated from one of the other technical courses at the Air Corps Technical School, or have had at least one year's experience as a mechanic in the Air Corps. In any event, the detail of applicants as students in this course is subject to the approval of the authorities of the school and of their respective organization commanders.

Once a student has been assigned for training to the Parachute Division, he immediately finds that the course is divided into two principle subjects; first, Parachute Construction and Repair and, second, Parachute Inspection and Maintenance. During the course of this training, all duties which devolve upon the parachute man when on duty at Air Corps stations are taught and re-taught in such a manner that there is very little chance of his ever forgetting any of the details. The standard of this training has in the past been so high, and the quality of service performed by graduates of this school so nearly perfect, that the Parachute Department at the average field is taken for granted as a department which always clicks and requires a minimum of supervision by anyone other than those assigned directly to the department.

In the last stage of his training as a parachute rigger, each student is encouraged to make at least one live parachute jump. As this jump is made with a parachute folded, packed and inspected by the student jumper, it is needless to say that it is looked upon as the final examination which entitles him to a diploma as a qualified parachute rigger.

Although the Parachute School has been in operation for many years, and thousands of live jumps have been made by students undergoing training therein, there has never been a single fatality as a result of this rather stiff "Final exam."

Jumping day is naturally a red letter day for the students and as a result of the enthusiasm stirred up, many mythical organizations have been created to commemorate this day. The Rip Cord Club of the World seems to be the coveted "lodge" and at the present writing has a membership well up in the thousands.

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"Maggie" and "Jiggs" - a couple of stooges for the Parachute Department, who have made hundreds of test jumps, all of which have been successful.

J.TOBUREN
Basic

P.W.KUHLMAN
Comm.

J.B.STEWART
Mech.

R.CARRINGTON
Mech.

M.ROWLAND
Basic

G.M. DEREW
Comm.

TROY TOLLE
Mech.

L.OGLE
Mech.

J.P.WYNNE
Photo.

H.J.ROBERTS
Mech.

C.M.CHALK
Mech.

B.ANDERSON
Mech.

F.E.FISH
Clerical

H.HEDGER
Photo.

C.J.MOORS
Mech.

C.W.RICHARD
Comm.

A.P.LANTIS
Basic

CIVILIAN INSTRUCTORS

W.H.JACKSON
Mech.

W.E.BROWNING
Mech.

F.MARTIN
Mech.

C.O.HOBSON
Mech.

A.W.FORGAARD
Photo.

H.E.JOHANSON
Mech.

D.ALLEN
Mech.

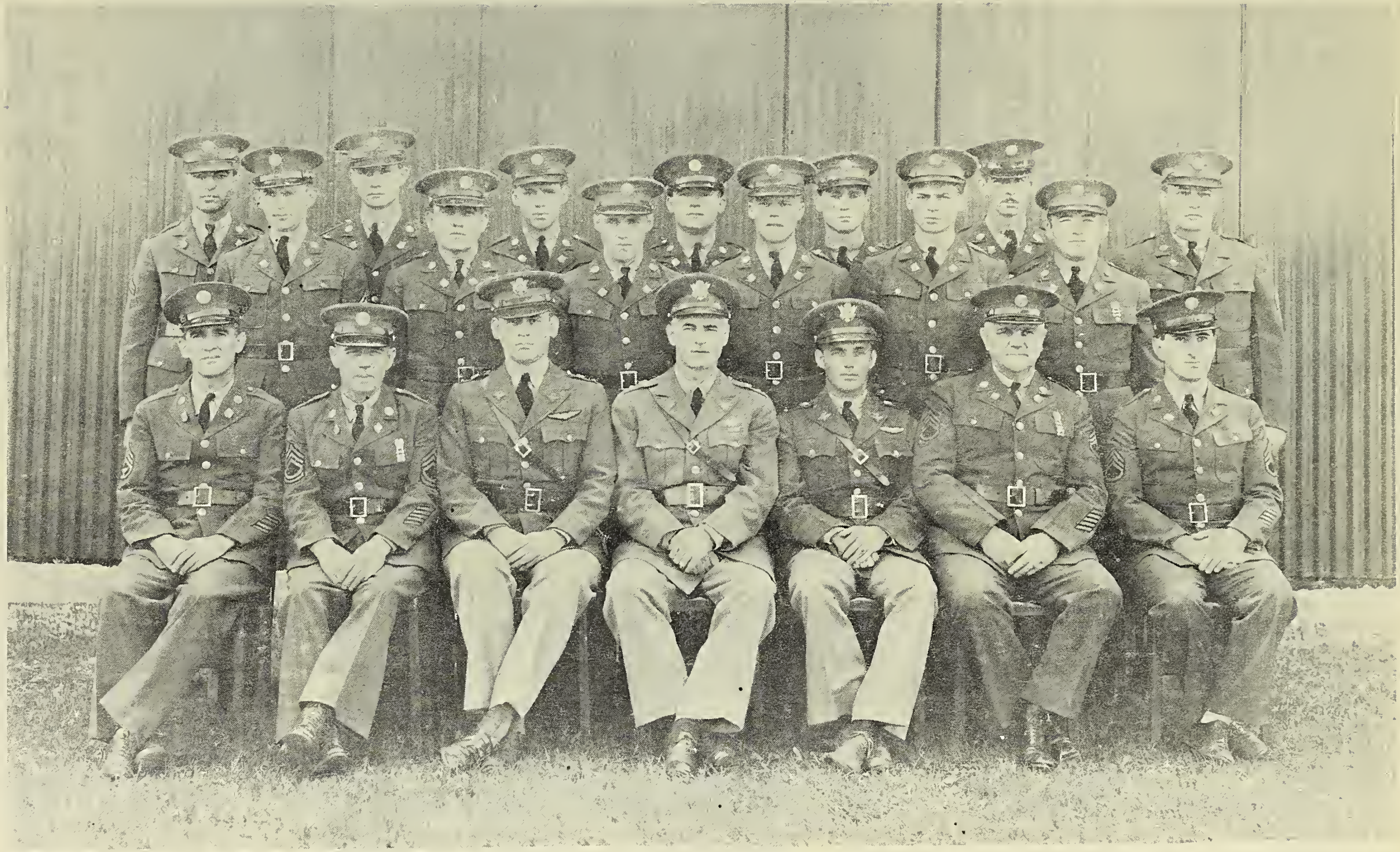
T.E.STINSON
Mech.

R.E.BRANSON
Mech.

J.L.SPRAGUE
Mech.

D.DRINKWALTER
Basic

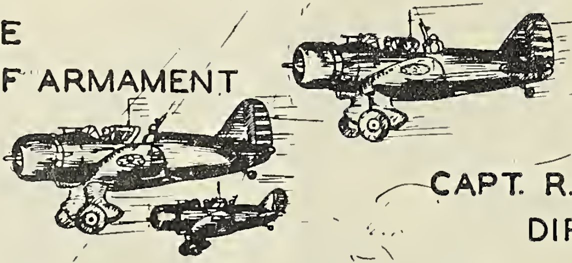
J.R.CARROLL
Mech.



- THE DEPARTMENT OF ARMAMENT -

Reading left to right - Back Row: Corp. R.M. Sinnen, Pvt's C.A. Proctor, G.L. Huntsman, V.R. DeCanter, G.L. Phillips, R.L. VonDuyke, Middle Row: Sgt. F.P. Mason, Pvt. D. Moyer, Corp. L.S. Ringo, Pvt. J. Watterson, Pfc. P. Blalock, Corp. R.U. Green, Sgt. W.S. Blalock. Bottom Row: St. Sgt. W.O. Brewer, T.Sgt. A. Junkert, Lt. N.H. Ives, Capt. R.D. Reeve, Lt. W.D. Ganey, S.Sgt's Kingman, Shine.

THE
DEPARTMENT OF ARMAMENT



CAPT. R. D. REEVE A.C.
DIRECTOR

Anyone will readily admit that an airplane will not fly without an engine, and conversely, that an engine cannot fly without an airplane. But this department has a creed which includes the basic logic that a pursuit, attack or bombardment airplane has no excuse for existence without its armament, and further, that in wartime operations no combat organization, despite the excellence of its flying equipment and the skill of its pilots, can be better than its armament and its employment.

Accordingly, the Department of Armament of The Air Corps Technical School has for its assigned and self-assumed purpose the training of thoroughly competent Air Corps Armament Officers and enlisted aircraft armorers, together with necessary specialist and allied phases requisite to the highest order of maintenance of combat aircraft armament for the various organizations of the U. S. Army Air Corps.

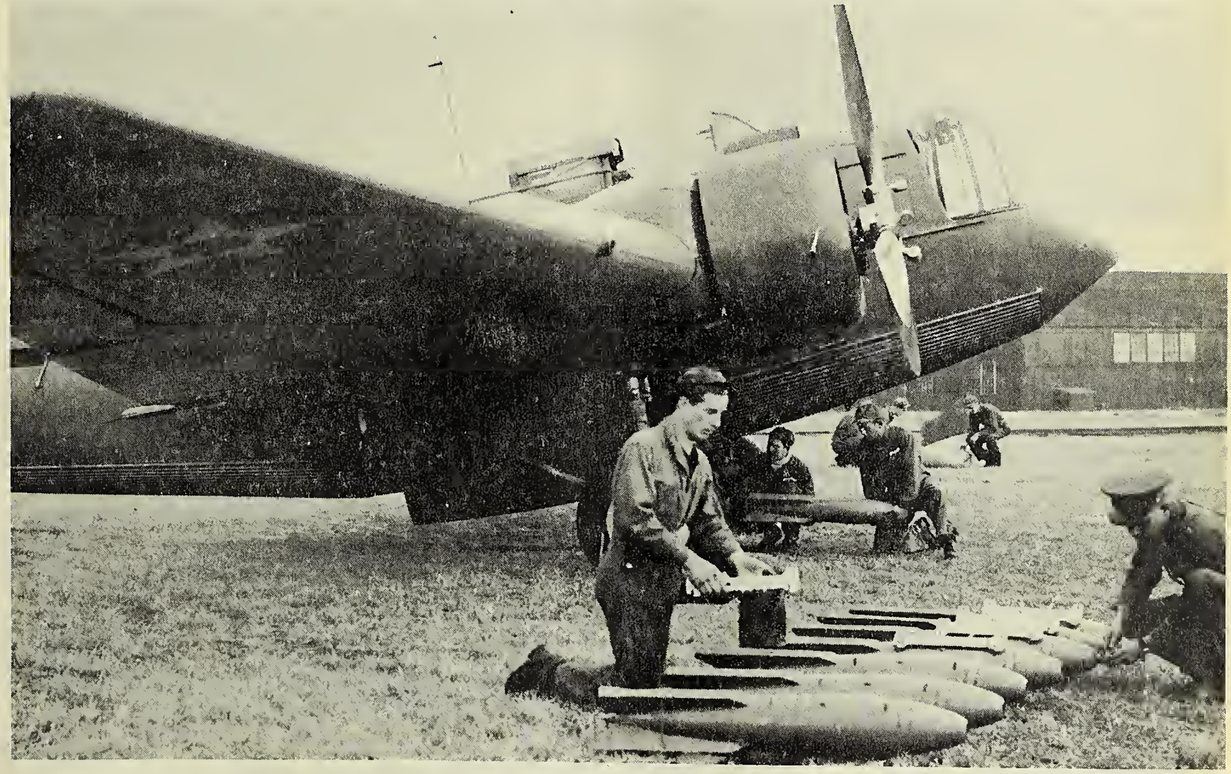
To the above end constant effort is put forth to instruct all students in not only the armament equipment and installations used on current types of aircraft, but also the newest developments and as far as possible future developments.

The curricula of this department include courses for Regular Army Officers, National Guard and Reserve Officers, enlisted aircraft armorers and bombsight specialists. The Regular Army Officers course consists of seven months, one of which is devoted to basic preparatory work and the other six to intensive class-room and field laboratory training in the various phases of armament. The National Guard and Reserve Officers course is of three months' duration. The enlisted armorers course covers a period of twenty-four weeks, of

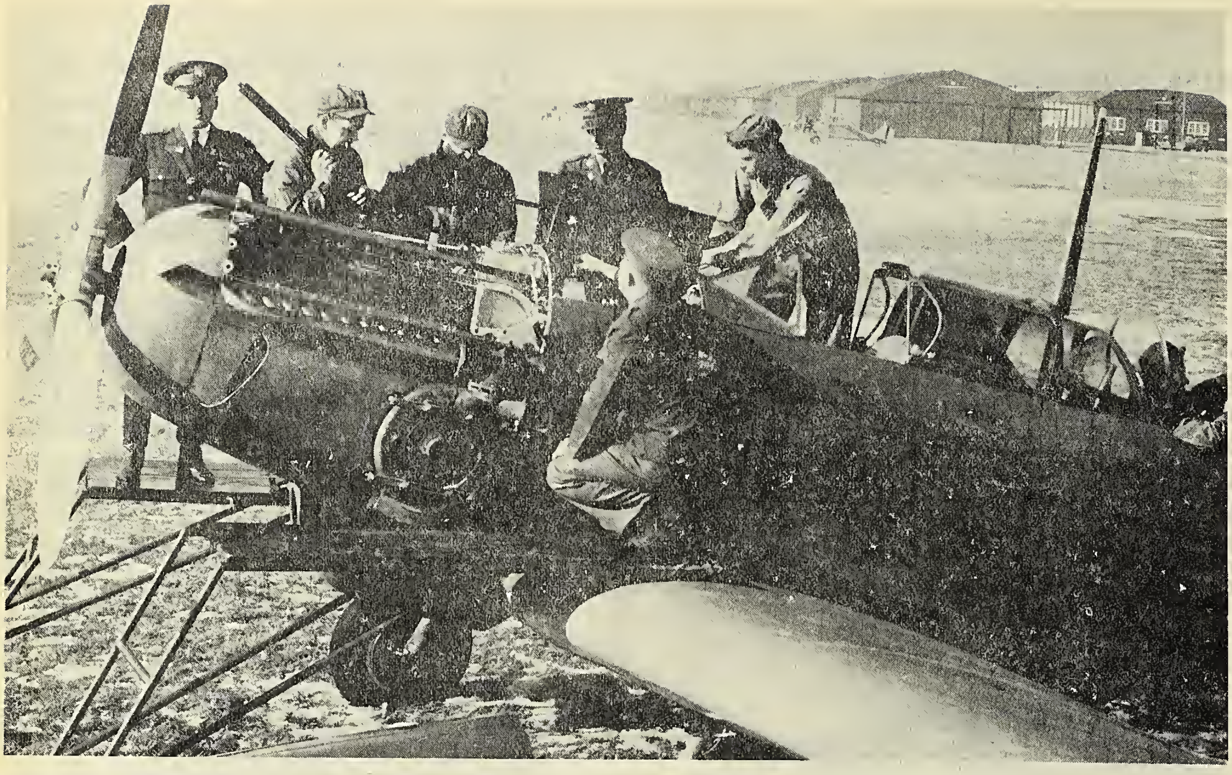
MACHINE GUN STORAGE RACK

which four weeks is devoted to basic subjects. The bombsight specialists course is eight weeks in length, combining intensive study in theory of bombsights and practical instrument work. The phases of the Armament courses include the following: Small Arms, Aircraft Machine Guns, Aircraft Machine Gun Sights, Synchronizing, Gun Cameras, Machine Gun Mounts, Explosives and Ammunition, Bombsights and Camera Obscura, Wire Work, Sheet Metal Work, Bomb Racks, Flare Racks, Tow Target Equipment, Machine Gun Electric Controls, Bombing Electric Controls, Chemical Warfare Materials and Equipment, Armament Organization, and at present, short periods of intensive field training in servicing of bombing and firing airplanes together with correction of natural and artificial malfunctions.

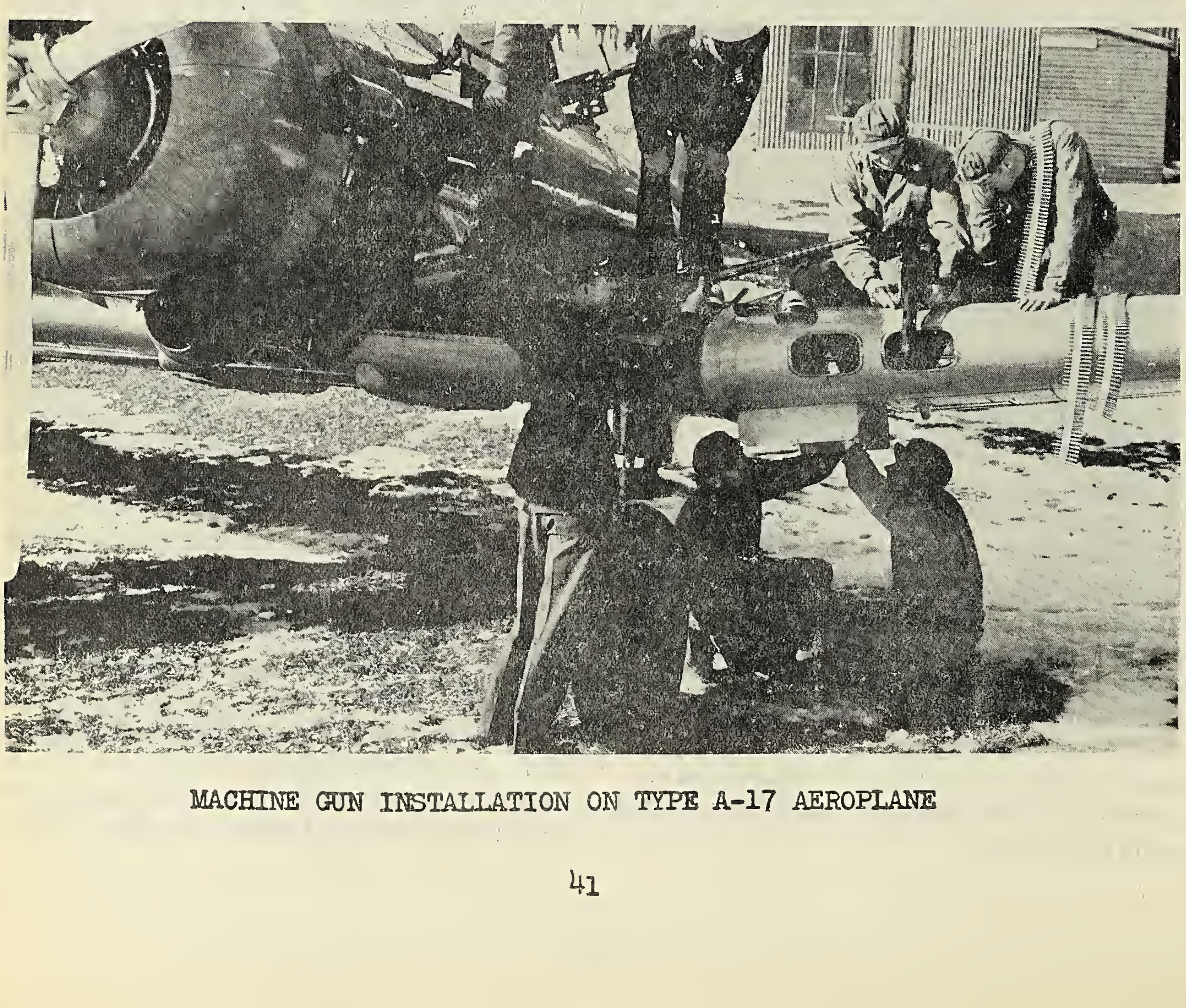
For the accomplishment of the above the department is composed of four divisions: the Elementary and Specialization Division, the Machine Gun Division, the Bombing Division and the Chemical Warfare Division, each of which is supervised by an individual officer. Instruction is presented by a corps of four officer instructors and twenty enlisted instructors, each of whom is a specialist in one or more particular phases, but each of whom is, as a result of intensive training during the last two years, capable of instructing in any of the phases of armament. The program of instruction for the present year will include graduation of one Officers Class of approximately ten members, eleven enlisted armorers classes of fifteen members each and five bombsight specialist classes of eight members each. During the last two years the enlisted classes have



STUDENTS FUZING AND LOADING BOMBS ON TYPE B-10 AEROPLANE

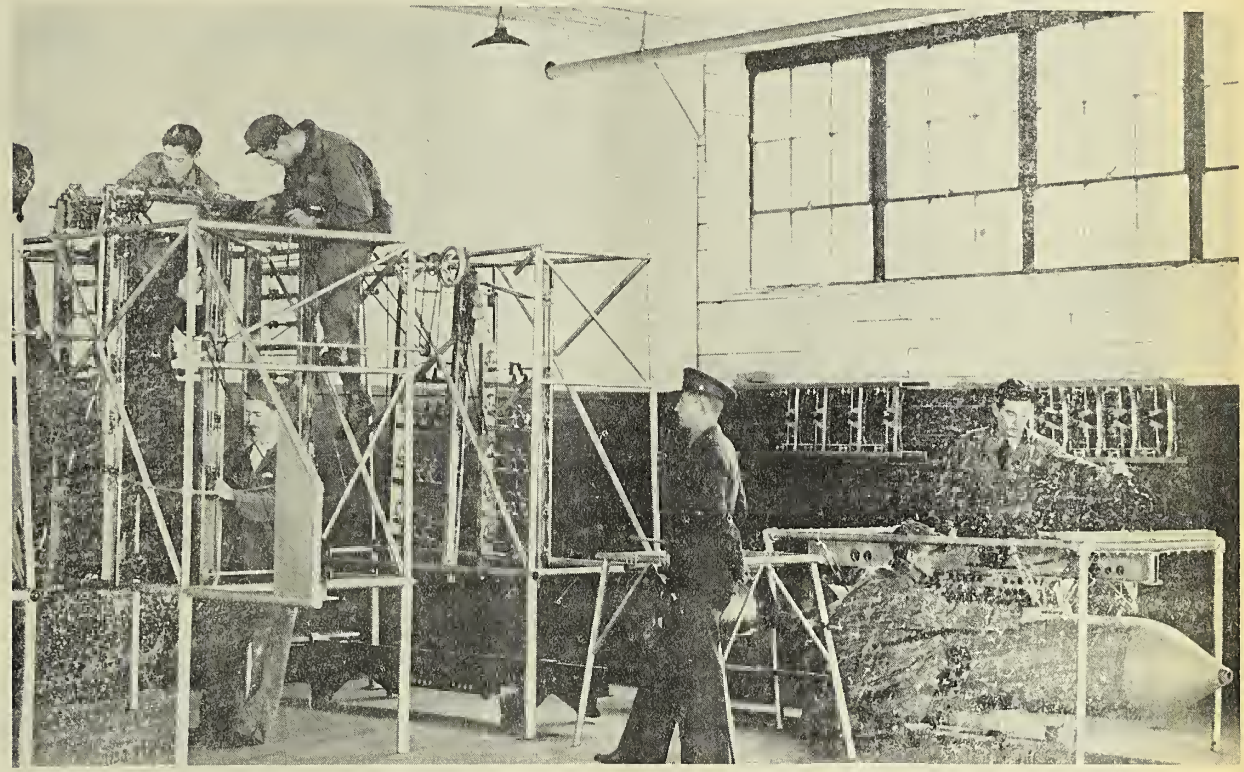


MACHINE GUN INSTALLATION ON TYPE PB-2 AEROPLANE



MACHINE GUN INSTALLATION ON TYPE A-17 AEROPLANE been expanded from five classes of six members each.

A major factor in graduating qualified armament officers and aircraft armorers has been the establishment of scheduled field exercises initiated during the last school year. The Maxwell Field Bombing and Gunnery Base at Valpariso, Florida, was generously made available to this department for specific periods of which full advantage has been taken with great benefit not only to the students but to the instructional staff as well. The Regular Army Officers class is employed in field machine gunnery on latest types of airplanes for two weeks, followed at a later time by two weeks of bombing exercises, each officer performing not only the duty of pilot but also as armorer. Each enlisted class is scheduled for a two-weeks' period of bombing and gunnery combined. These field exercises constitute a most important phase of the course, employing the student in intensive practical work, actually handling live ammunition and high explosives, servicing the armament equipment of the most modern types of flying airplanes under service conditions, and applying class-room knowledge in actual field operations, with emphasis on trouble-shooting of all natural and contemplated malfunctions. The result is the graduating of what may be considered stable, well-qualified, semi-experienced armament officers and armorers, far different from the previous armament graduate who, without the training in such field laboratory work, could have only his class-room instruction to qualify him, through lack of space and facilities in the vicinity of Chanute Field proper for training



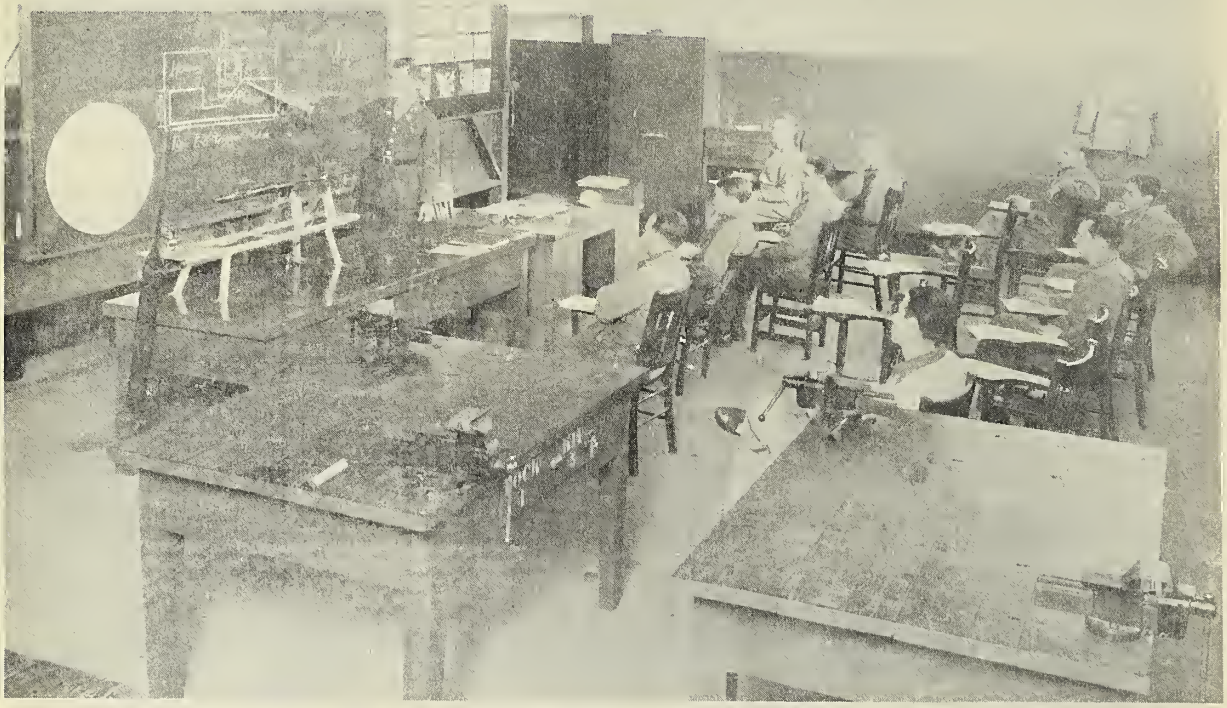
CLASS-ROOM INSTRUCTION ON BOMB RACKS

with actual firing and bombing airplanes.

However, this arrangement for field training is only a poor substitute for field laboratory work that should be included in the Armament courses with range facilities adjacent to or close by the school itself. Conducting these exercises at a distance of 700 miles, field training has necessarily been for any one class conducted in a concentrated period, while for proper instruction the department should have those facilities next door, where field work could be performed daily in conjunction with classroom work, much the same as laboratory work in any college. When a range of this type is provided, as is expected at another location, the department will take a large step forward in unification of its instruction with direct results in the caliber of its graduates, together with expansion in classes.

The one outstanding law of the Department of Armament of the Air Corps Technical School is that a graduate, officer or enlisted man, must, before even being considered for graduation, demonstrate absolute reliability with reference to all phases of work with aircraft armament. The staff of the department is thoroughly inculcated with the principle that a poor engine mechanic or a poor airplane mechanic may cause failure of mechanical equipment resulting in fatalities, but that a poor armament mechanic is almost certainly to go farther in a consideration that he is not only responsible for proper operation of machinery but also the proper handling of high explosives.

Another basic principle of this department is to keep abreast of not only present but future or contemplated developments in aircraft armament and to obtain equip-

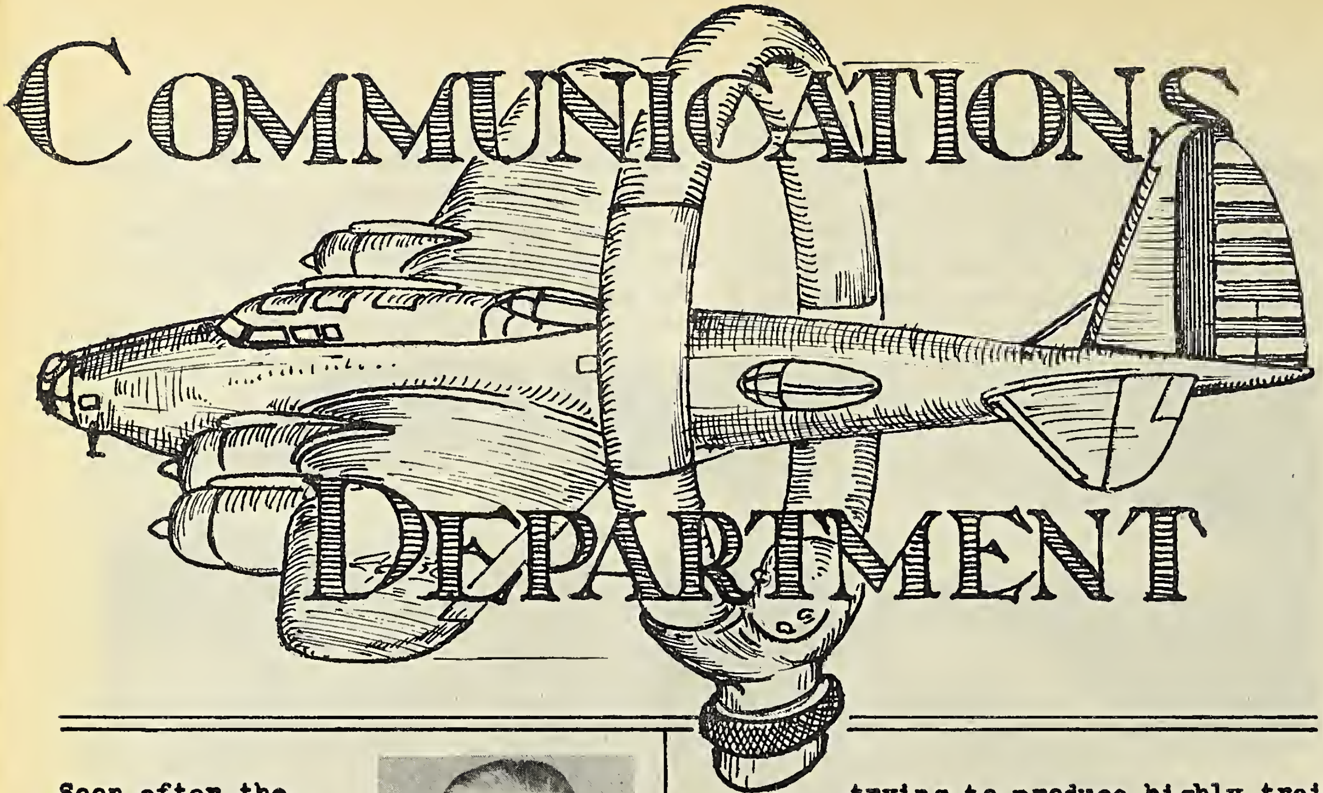


CLASS-ROOM INSTRUCTION ON SYNCHRONIZING MECHANISMS ment and include instruction according to this principle in all phases of the subject, in order that the officer or enlisted graduate may go to his organization or new station equipped to function with not only the equipment used at that station upon his arrival, but also to be familiar with new equipment to be expected.

FUZING AND LOADING BOMBS ON A-17 AEROPLANE

CLASSROOM INSTRUCTION IN MACHINE GUNS

COMMUNICATIONS DEPARTMENT



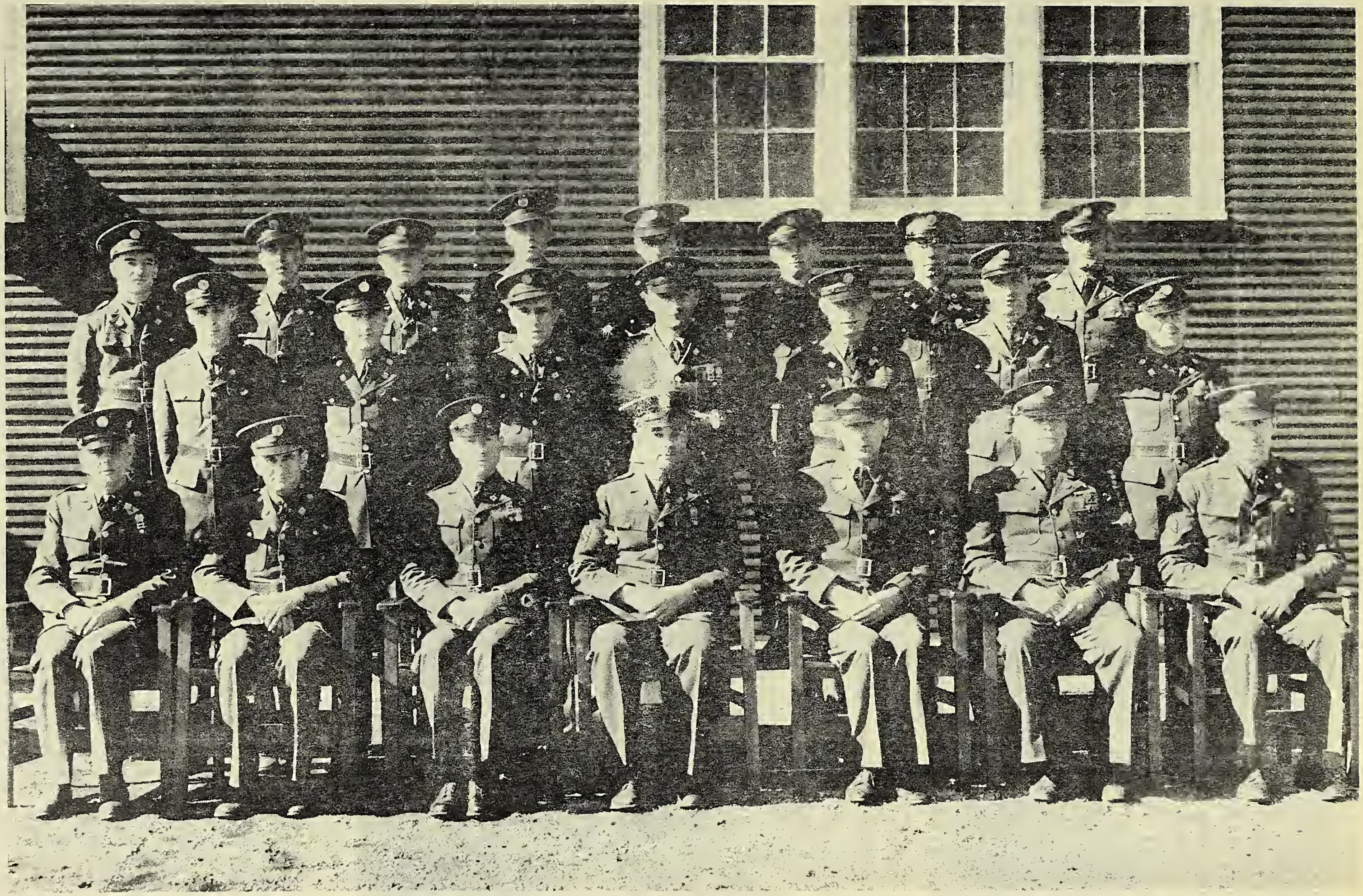
Capt. N. D. Frost
Director

Soon after the World War, plans were made for the training of Air Corps Communications personnel by the Air Corps. In 1919 the Air Corps Communications School was organized and placed into operation at Post Field, Fort Sill, Oklahoma. During the summer of 1922, the Air Corps Communications School was moved to Chanute Field, Rantoul, Illinois where it lost its identity as a separate school and became the Department of Communications, Air Corps Technical School.

The curriculums of both the officers and enlisted courses have been changed many times in an effort to keep abreast of the rapid technical progress in communications equipment employed by the Air Corps. In the school year allotted for the officers' course it is difficult to cover properly all the essential subjects. However, it should be remembered that the school is not trying to produce highly trained specialized engineers but rather to train officers for tactical assignments in Air Corps Communications. The twenty-eight weeks (for unassigned) and twenty-four weeks (for assigned) enlisted students are devoted to the training of combined radio operators - repairers in order that graduates may be qualified to act as radio operators aboard aircraft or at ground stations and to be able to perform all pre-flight, daily and maintenance inspections of radio equipment.

The curriculum may be roughly divided into three parts. Approximately one-third of the time is spent in the study of the fundamental and theoretical subjects such as electricity and magnetism, high frequency phenomena, vacuum tube characteristics, receiving circuits, transmitting circuits and antennae. One-third is devoted to Radio Operating involving transmission and reception of the international morse code, typewriting, and radio and teletype procedure. The other third is utilized for instruction on the circuit test and repair of radio equipment, the maintenance

1st Lt. C W Haas
Asst. Director



Enlisted Staff, Department of Communications.

of radio installations and the supply and administrative regulations, pertaining to communications.

The widespread realization that dependable radio communication is an essential adjunct to successful aerial operations has resulted in a very great demand for a large number of trained communications personnel.

One of the first classes the embryo "communicator" attends is Typewriting; typewriters having Western Union keyboards are used and the minimum requirement is Ediphone recorder for checking student transmitting ability, and an "ink recorder" for making permanent records on paper tape of each student's accuracy in forming code characters with the standard hand telegraph key and the Vibroplex semi-automatic key.

When the average student has obtained a code speed of approximately twelve words per minute he is ready for the subcourse called Radio Procedure; this subject includes all phases of operating technique, aside from the actual use of radio equipment, which the aircraft radio operator must know.

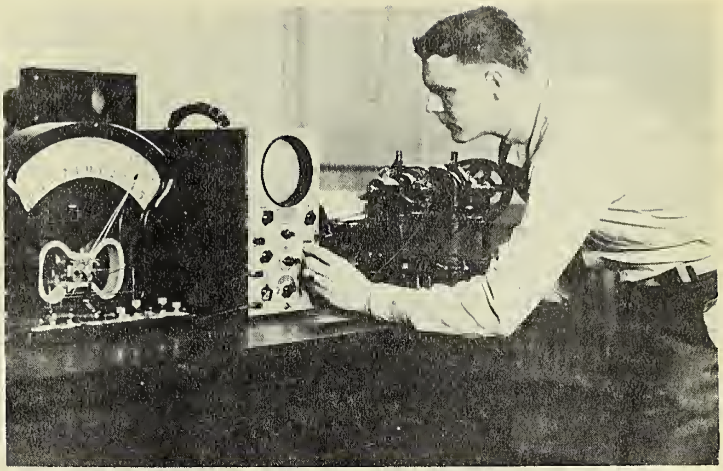
Students taking Code instruction.

twenty words per minute using the touch system. Those students who are already proficient in the use of the typewriter when they enter school are excused from typing and attend code classes instead.

After the student has qualified in typing he attends code instruction twice daily for the duration of his course. The Code Room is equipped with automatic code machines of modern design, low and high frequency radio receivers, an Each student is required to develop an operating knowledge of the Joint Army and Navy Radio-telephone Procedure and the procedure in communicating with Department of Commerce radio facilities. After learning the principles of "message handling", the student applies them in practical exercises throughout the remainder of the course.

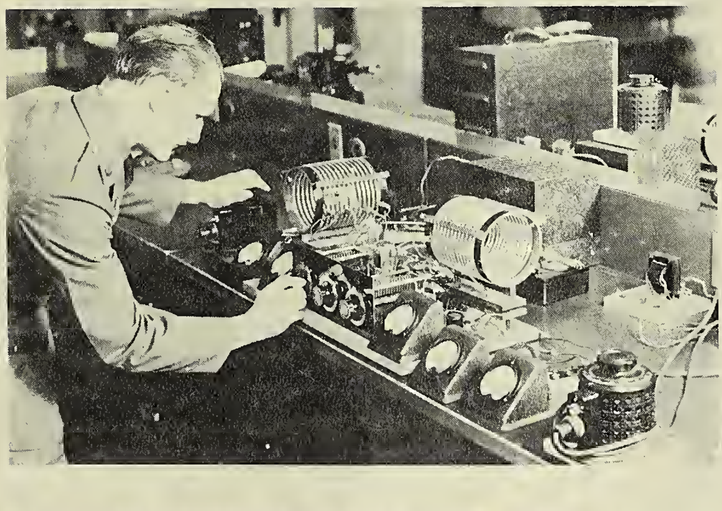
A brief but comprehensive course in electrical and radio fundamentals is given in the subcourse entitled Principles of Radio Communication.

While theoretical in nature, this subject has been made highly practical through the careful selection of demonstration and individual laboratory experiments. For example, students undergoing instruction on radio transmitters perform experiments which demonstrate the principles involved in the Command and Liaison Set transmitters; particular attention is devoted to the proper tuning and adjustment of the circuits and correct interpretation of meter indications since experience has shown that these "theoretical" factors are of considerable importance in the practical use of the actual radio sets installed in aircraft. Cathode ray oscilloscopes are frequently used to make visible demonstrations of electric wave phenomena which formerly required the student to exercise considerable imagination. The equipment for individual laboratory experiments is permanently mounted on breadboards; with his experiment each student is given a supply of wires terminated in special quick-fastening connectors resembling glove snaps so that the more complicated hook-ups may be accomplished within a few minutes. Specially prepared experimental data sheets are provided with each experiment so that students may quickly record laboratory data and have sufficient time to write out the answers to questions devised to aid them in drawing logical conclusions. From the foregoing description it will readily be appreciated that the Department of Communications has far better lecture room and laboratory facilities than most colleges and universities.



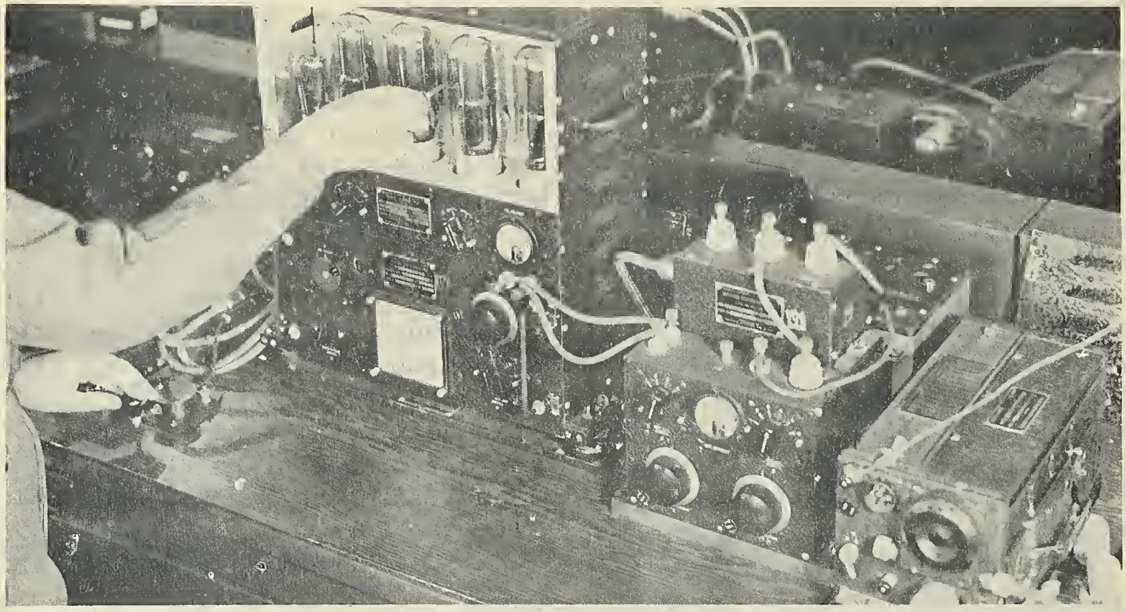
Demonstration by Sgt. Jones, Instructor in Principles of Radio Communication

An understanding of the electrical and radio fundamentals provides the student with a proper foundation upon which to build his practical knowledge of standard Air Corps radio equipment; this special knowledge is acquired in the subcourse called Circuit Test and Repair of Radio Sets. In this subject the student receives practical instruction on the operating



Pvt. Chamberlain, Student, performing experiment in Principles of Radio Communication.

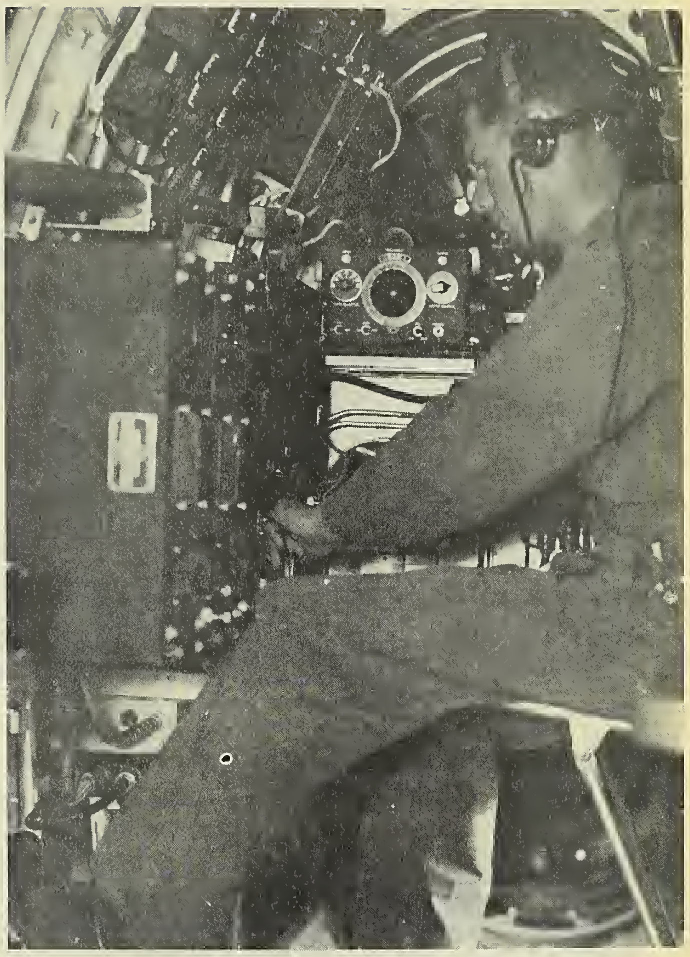
adjustments, circuit testing and applied principles of modern service radio equipment. The Circuit Test and Repair laboratory contains over fifty specially designed steel laboratory tables on which are mounted modern types of Command Sets, Liaison Sets, Radio Compasses, and Test Equipment; all power for the operation of aircraft radio equipment is obtained from a central power plant adjoining the laboratory room. Conspicuous by way of contrast is a row of ten aircraft radio transmitters, in vogue over ten years ago, which are employed in teaching the principles of transmitter trouble shooting. This is done by requiring the student to place designated troubles in the transmitters after which he records and analyzes the symptoms obtained. Although obsolete equipment is used in this phase of instruction, the principles involved are essentially the same as those embodied in modern equipment. Working with modern equipment the student is required to develop an intimate practical knowledge of the numerous adjustments essential in its intelligent operation and maintenance. The general objective in this subcourse is to develop in the student the ability to read and understand the Manufacturers' Handbooks of Instruction and Technical Orders pertraining to standard radio equipment, and intelligently to apply the directions contained therein. It is doubtful if a more complete and well designed laboratory for this kind of important instruction could be found anywhere.



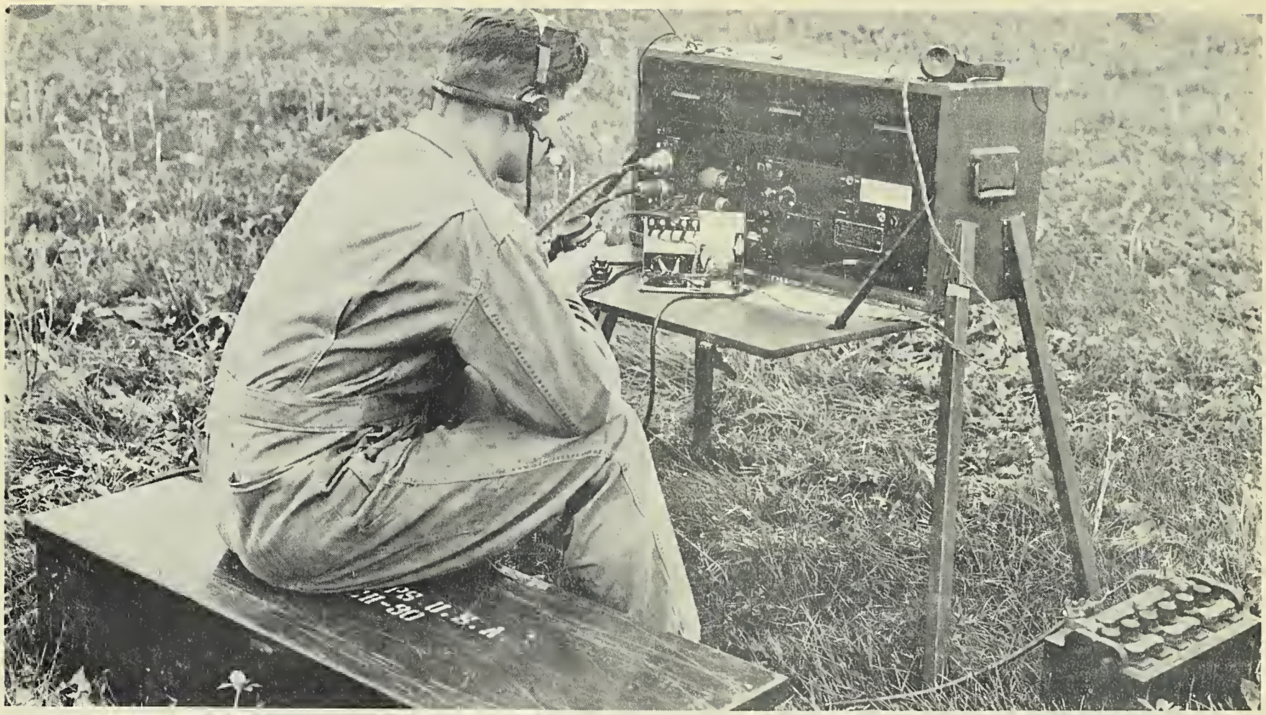
Student Bench Testing Airplane Radio Set.

Field telephony is employed by the Air Corps to a limited extent, generally during maneuver periods; consequently the instruction given in wire communication equipment is rather limited. During the time allotted, the student receives instruction in the installation, operation and field maintenance of field telephones and switchboards. Following instruction and practice in the installation of simple field wire systems, the student receives a small amount of training in field trouble shooting methods. The principles of wire telephony are also embodied in aircraft interphone equipment, a thorough knowledge of which is essential to aircraft radio men.

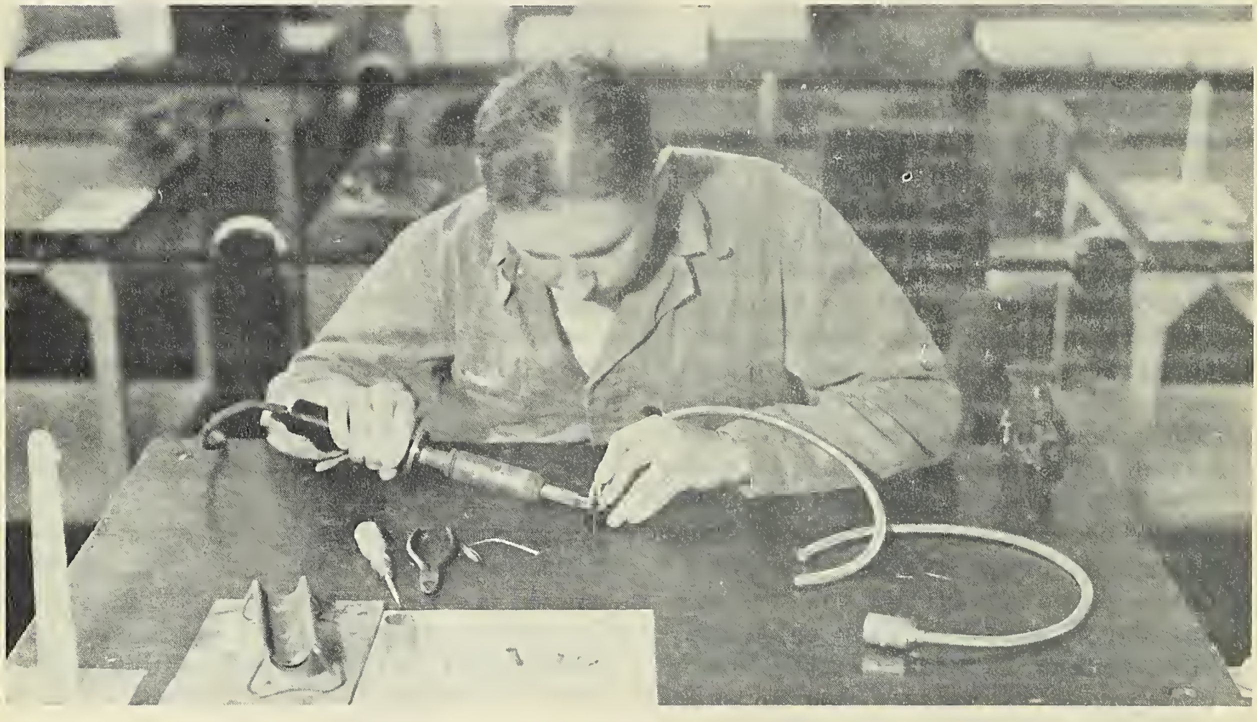
The final phase of the course is devoted to thorough instruction highly practical in nature on cord and plug assembly and on the Inspection and Maintenance of Radio Installations. The ability to handle skillfully a soldering iron is almost as important to aircraft radio men as the ability to handle radio messages. In this subcourse students receive expert instruction in the care and use of soldering irons and the few hand tools associated with the radio repairman's work. Practical jobs assigned on this phase of instruction include radio cord and plug assembly. In connection with instruction on the Maintenance of Radio Installations the student is taught how to install and service aircraft antenna installations, how to "bench test" radio equipment prior to placing it into service on aircraft, how to perform the prescribed inspections of aircraft radio installations, and how to use a systematic method of locating troubles in the installations. Special lectures are given explaining the Air Corps Technical Order system, the Air Corps Circular system and the Signal Corps Supply Letter system; the student is required to look up references in these files throughout his work in this phase of instruction. The student is also taught how to read an airplane electrical wiring diagram, since some of the wires of the airplane communication system are included in the same conduits as other portions of the airplane electrical system. When aircraft are available, students are given actual operating practice in flight. The instruction on Ground Radio Installations includes field exercises involving the operation of radio nets including two way communication between airplanes in flight and ground stations. In every respect, this subcourse is the most practical and most valuable in the entire communications course; it may be likened to the keystone of an arch, and being so, it requires the firm foundation supplied by the various other courses which are prerequisite to it.



Pvt. Norman, Student, making Inspection of Radio Equipment installed in Bomber, Type B-10.

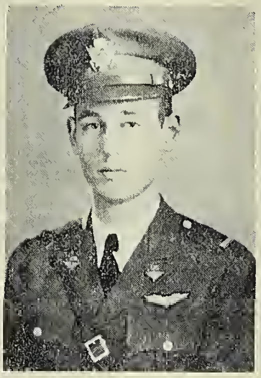


Pvt. Robinson operating a Receiver of Squadron Ground Set.



Pvt. Michael repairing Cord & Plug Assembly for Airplane Radio Set.

The Department of Communications has adopted as standard for all examinations the so-called "New Type" examination questions; examinations of this type often include over a hundred questions, yet their design is such that they can be completed by the average student in from twenty-five to thirty minutes. The examinations may be graded in a few minutes through the use of specially designed answer keys, the use of which insures a standard basis for the grading of all examinations since there can be no doubt as to the "degree of correctness" of any question; instructor opinion is thus eliminated in the grading of examinations and the grade awarded a given paper will be the same regardless of who grades it. By making the examination comprehensive in scope, each instructor can obtain a reasonably accurate measure of the knowledge possessed by his students, since error due to chance selection of questions are virtually eliminated. When a sufficient number of students have taken each examination, the Training Literature Section conducts elaborate statistical investigations for the purpose of eliminating poorly designed questions and determining the degree of difficulty of the remaining questions. By this process, subsequent revisions of examinations are subject to continuous improvement as the amount of statistical data accumulates. In practice, the use of the New Type, comprehensive examinations has met with universal favor by both instructors and students since considerable time is saved by all concerned.



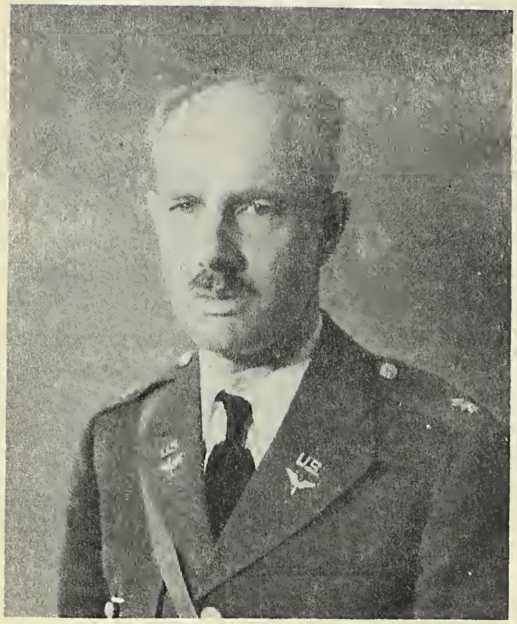
1st Lt. G.A.Blake
Asst.Director

Many of the graduates of the communications course will report to their organizations to become aircraft radio operators aboard modern bombardment airplanes. Their responsibilities are akin to those of radio operators aboard seagoing vessels and they will become more so as military aviation develops and progresses. It does not require much imagination to conceive of situations where the radio operators will be directly responsible for the safety of the airplane on which he is flying and its crew; in such situations the level headed, resourceful operator of high technical qualifications will perform a service of much greater value than the cost of his training at the Air Corps Technical School.

With the almost continuous expansion of communications facilities within the Air Corps from both an airplane and ground standpoint an interesting and worth while career is practically assured for those who follow up this specialty. At the present time the Air Corps as a whole has a need for approximately a thousand more trained communication specialists above the normal yearly attrition.

Untrained men of the Air Corps and those planning an enlistment in the Air Corps are urged to investigate the possibility of becoming enrolled for the radio operators - repairers' course of the Air Corps Technical School, thus assuring an interesting career.

THE DEPARTMENT OF PHOTOGRAPHY



Major Donald G. Stitt, A. C.,
Director.

Captain Donald W. Norwood, A.C.,
Assistant Director.

- - - - -

The Department of Photography of the Air Corps Technical School is charged with giving photographic training to such officers and enlisted men of the Air Corps and National Guard as may be designated by the Chief of the Air Corps.

The training given in this course is so planned as to provide a balance between practical work and theory so that the graduate will not only be able to accomplish the photographic duties assigned to him, but will know the reasons behind every operation he performs. For example, in outdoor photography, he will not only use the correct filter when photographing any given scene, but he will know just what the effect of that filter will be for that particular scene on the type of film being used. In the laboratory he will not only know standard time of development for any given type of film, but will also know under what conditions that standard time of development should be modified in order to produce best results. And so on with every function performed.

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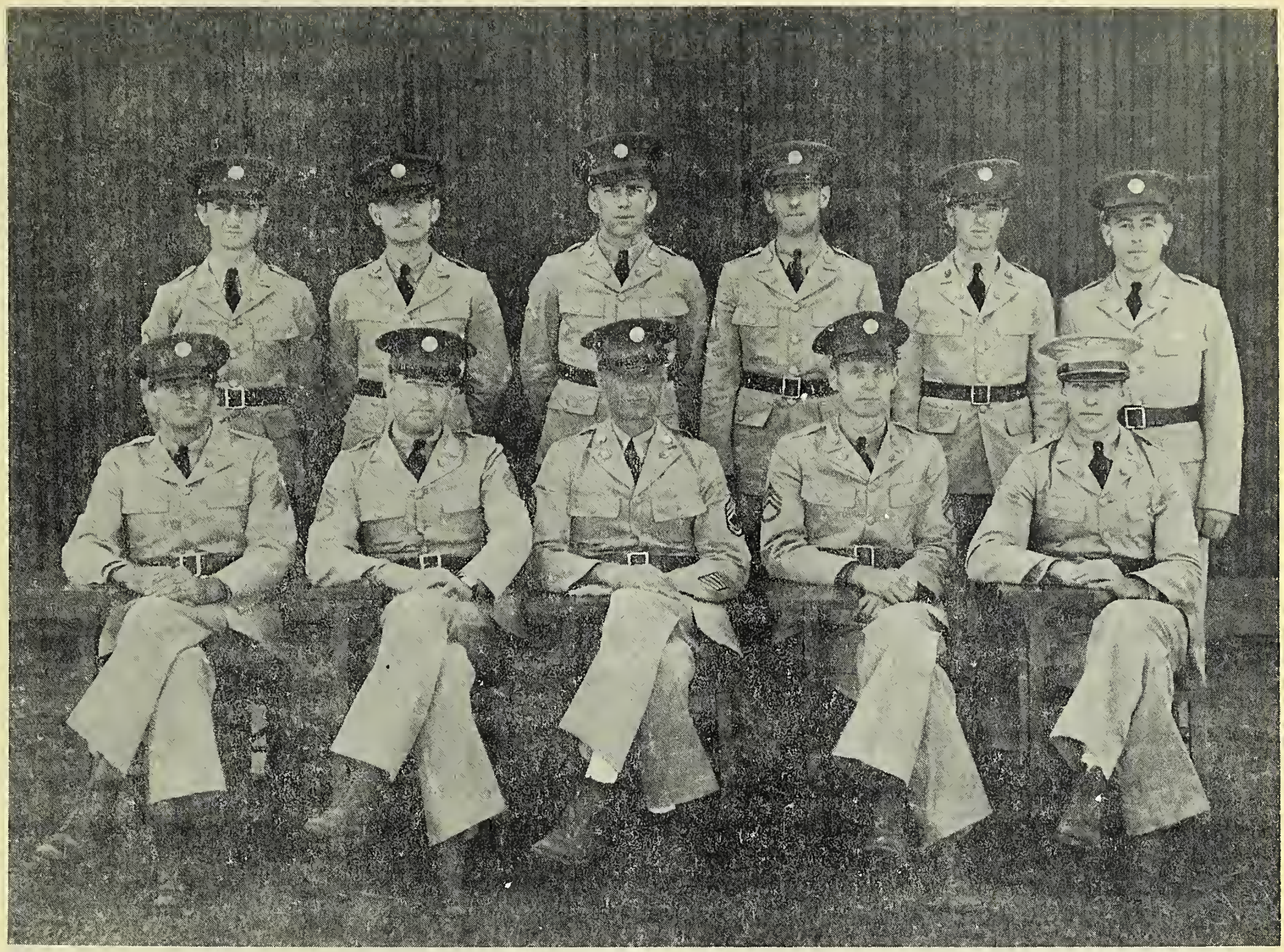

Enlisted Instructors

Top Row: Pvt.AM2cl John J. Williams; Instr. Mosaic & Mapping; Pvt. Chas. T. Forsyth, Instr. Aerial Photo Division; Pvt.AM2cl Norbert Danko, Instr., Preparatory Division; Corp.AM1cl Lehr Cochran, Instr. Mosaic & Mapping; PFC Charles G. Wilcox, Instr. Ground Photography Division; Pvt.AM2cl John Koelbl, Instr., Aerial Photo Division.

Bottom Row: Sgt.AM2cl John A. Hancock, Instr. Preparatory Division; St.Sgt. Herbert Spees, Instr. Mosaic & Mapping; Tech.Sgt. Arthur Stolte, Instr. Aerial Photo Division, Camera Repair and Maintenance; St.Sgt. Robert H. Spencer, Instr. Ground Photography Division; Pvt.AM1cl Leonard E. Wine, Instr. Aerial Photo Division and Camera Repair;

ELEMENTARY DIVISION

The Photographic School has four main divisions. The student goes through these progressively, going first into Elementary Photography where he is taught the Fundamentals of Photography, Elementary Photographic Chemistry, Photographic Optics, Negative Making and Printing.

Pvt. Wooles: "This aerial camera was as easy to take apart as my first watch".

While this division and the one which follows do not deal strictly with aerial photography, great stress is placed on the necessity for careful instruction in the basic principles of photography, a thorough knowledge of which is essential in enabling the student to analyze the problems which he will encounter later on.

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GROUND PHOTOGRAPHIC DIVISION

Upon successful completion of the first phase, the student goes to Ground Photography where instruction on Ground Cameras and their use is offered. In this division the student not only operates the camera but carries through with the negative processing and printing. The result of his efforts being a finished picture of the object or scene designated. The picture assignments in this division are many and varied including exterior and interior views, flash lights and time exposures, airplanes and airplane parts, catalog illustrations and portraits. Artistic composition is stressed in this work. The assignments are planned with a view to making the student completely familiar with the operation of ground cameras under a wide variety of conditions. The

Pvt. Taylor, instructor, shows Pvt. Johnson the fine points of using a **Pantograpl**

Pvt. Arnold tries his hand at mixing a developer solution.

laboratory work given in this division further develops the student's knowledge and skill in photographic processing.

AERIAL PHOTOGRAPHIC DIVISION

Master Sgt. Grover B. Gilbert, A.C., Senior Instructor.

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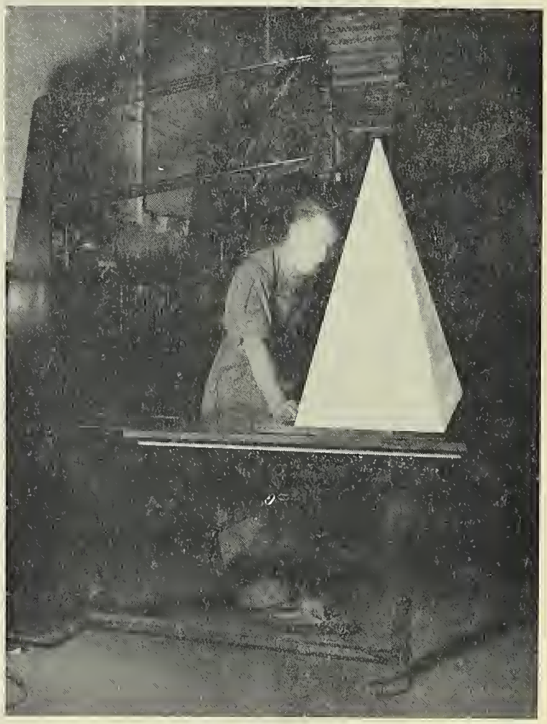
The third division is Aerial Photography. In this division the student learns the maintenance and operation of aerial cameras and associated equipment and the processing of aerial camera film. Practice in the operation of the camera in the air with different types of missions such as oblique, pin-point and mosaic is given. Aerial Cinematography, in which the theory of motion picture is studied and practical work in taking of aerial movies and subsequent development of film is covered in this division.

MOSAIC AND MAPPING DIVISION

In the fourth Division the student receives instruction in Mosaic and Map making Here he is given the theory underlying the making of maps; various projections of the earth's surface and the features of each; military grids; control points on the earth's surface; geographic coordinates, etc. A projection of a small portion of the earth's surface is constructed by each student, control points in the area plotted, and then a mosaic, consisting of prints made from an aerial negative, which the student has made is laid, gridded, titled and copied. This work is of great importance in the Air Corps and, consequently, considerable time is devoted to it in the course.



Pvt. Koelbl tries making "big ones" out of "little ones."

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The foregoing is just a brief sketch of the work that is given in the Photographic School and makes no attempt to cover in detail all the many and varied subjects that are brought together under the heading of Photography and must be mastered by any one who aspires to be an expert photographer.

It is the objective of the Photographic Department to turn as many of the students detailed as possible into graduate photographic experts. This can be done only by cooperation on the part of the student in studying and working hard after he gets here, and cooperation on the part of the organization commanders throughout the service in recommending for detail to the school only those men who have demonstrated that they have the requisite qualifications.

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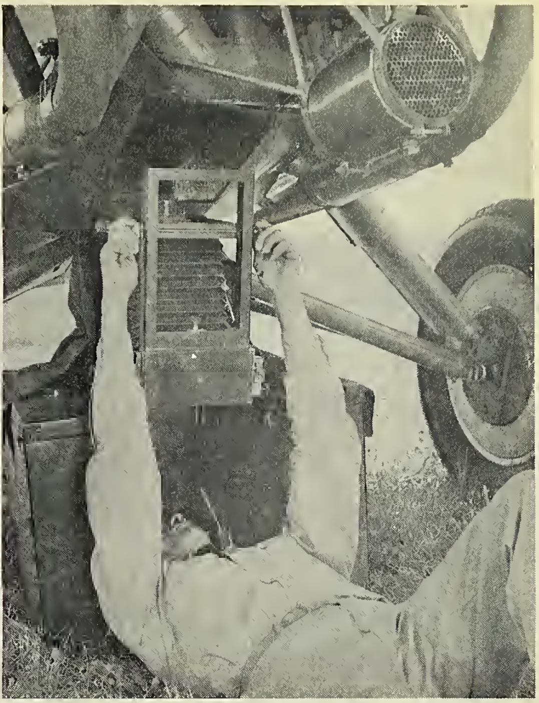


Pvt. Tomaso says "Before I got into Ground Photography, I thought Photography consisted of taking a picture of your girl and turning the film in to the corner Drug Store."

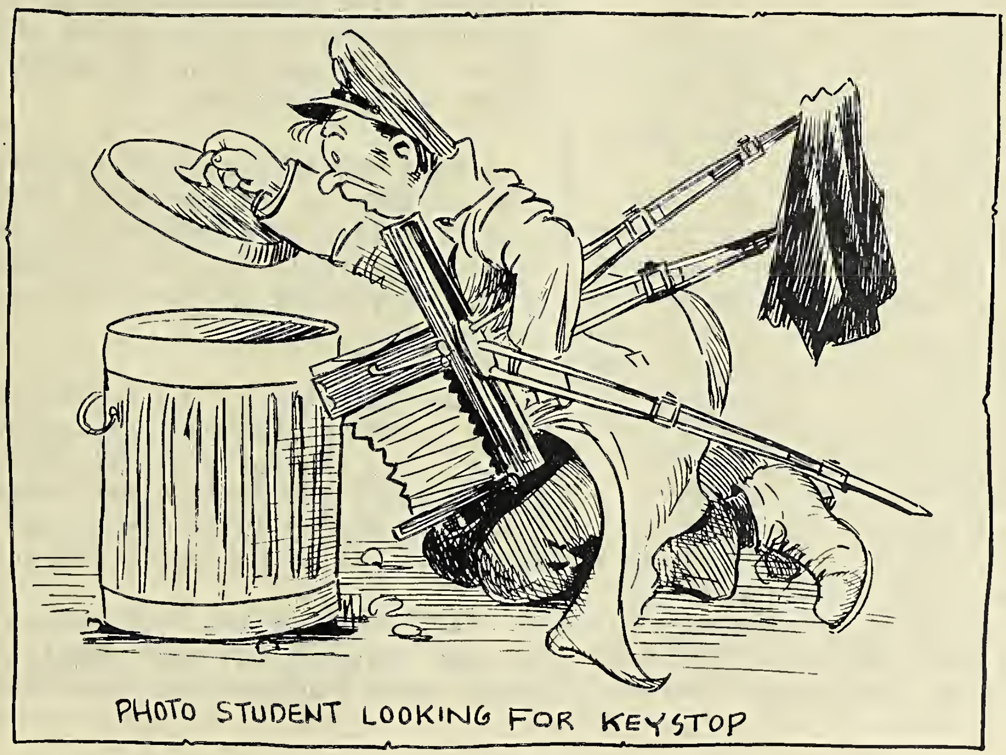
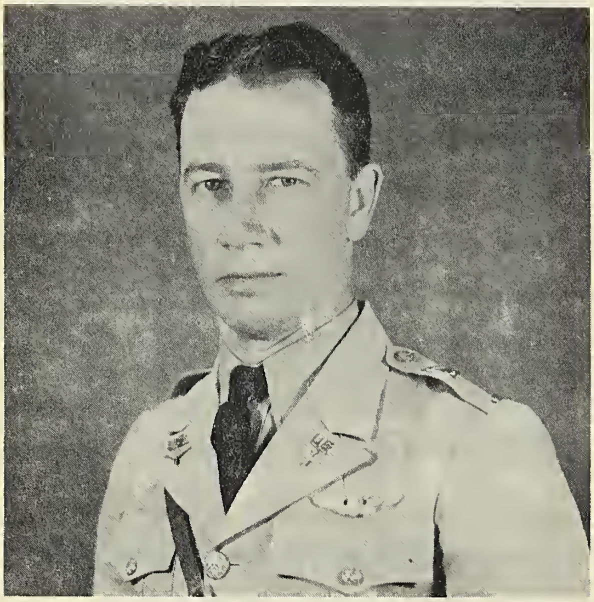


PHOTO STUDENT LOOKING FOR KEYSTOP

DEPARTMENT FOR INSTRUCTION OF AIR CORPS SUPPLY AND TECHNICAL CLERKS



1st Lieut. William P. Sloan, A.C., Director.

Competent, well-trained clerks possessing initiative, administrative ability, and a high standard of efficiency, in addition to a specialized knowledge of the particular clerical duties assigned them, are needed and especially desired in the Air Corps. Fully realizing the urgent need for such clerks--as much so as for skilled mechanics, radio operators, machinists, photographers, and other technicians--the Department for Instruction of Air Corps Supply and Technical Clerks was organized in 1933, and equipped with the most modern office equipment available. As the result of organizing this Department many men, who had some limited clerical training upon entering the service and were thereafter assigned clerical duties, have been afforded the opportunity to be detailed to a course of instruction arranged and specialized to "round out" their earlier training thereby fitting them for more efficient performance and accomplishment of their duties, as well as increasing their value to the service. Likewise, men who have ha no clerical training, but believe they possess the ability, capacity and educatio al qualifications necessary for a clerk ar given the opportunity to enter the course. The value of these graduates is readily recognized by their organizations and departments, with advancement and promotion awarded accordingly.

The main objective of the course is to train Supply-Stenographers and Operatio and Engineering Clerks. However, a graduate is also capable of easily becoming acquainted with office routine and can thus perform duties as an excellent clerk in an office other than those for which the course specializes him.

This special issue of the AIR CORPS NEWS LETTER, by the Air Corps Technical School, serves as a medium to give to the service the following general information on the curriculum, methods and scope of instruction:

The duration of the course is twenty weeks. Twenty students are trained in a class. Two classes are trained during the school year; the first class commencing on the first Monday in September and the second the first Monday in February.

All students are required to take General Instruction, upon completion of which those students who have shown the greatest aptitude for stenographic work, up to one-third of the class, are thereafter trained as Supply-Stenographers, and the remainder as Operation-Engineering clerks.

GENERAL INSTRUCTION. (4 weeks - 140 hours) Typewriting, military and technical phraseology, shorthand, adding and calculating machines, business arithmetic, and Air Corps circulars and technical publications.

SUPPLY-STENOGRAPHER. (16 weeks - 560 hours) Military correspondence, Burroughs bookkeeping machines, business English, supply, typewriting, shorthand and organization.

ENGINEERING-OPERATIONS. (16 weeks - 560 hours) Military correspondence, calculating machines, business English, engineering, operations, typewriting, Air Corps publications and organization.

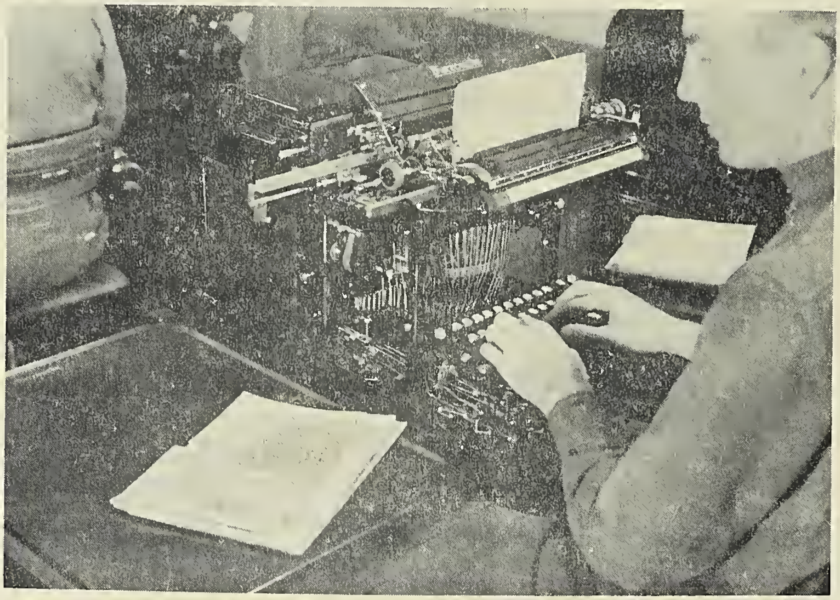
The method of instruction used in teaching Air Corps supply consists of a continuous series of practical problems that cover the initial equipping of tactical squadrons, posts and stations, and the maintenance thereof with supplies. This includes the requisitioning of supplies and equipment from Tables of Organization, Tables of Basic Allowances, and the use of Air Corps Stock Lists and Catalogs. These requisitions are followed through their source of supply, that is, the Station Air Corps Supply, the Control Depot, the Materiel Division, and, in necessary cases, to local purchases and contractors. In turn, these supplies are followed from the sources of supply to the source of issue and consumption. This procedure applies to both expendable and non-expendable equipment and supplies. These practical problems are accomplished on all the necessary and authorized forms.

Instruction in Engineering and Operations, like that in Air Corps Supply, is based on a series of practical problems, starting with Air Corps Form No. 1, which includes flying problems designated by Operations Orders, Field Orders and schedules of training. These problems are followed through by accomplishing the necessary authorized forms in making a record of aircraft and individual personnel flying time. The above problems are based on all different types of aircraft, in order to cover all types of flying problems, which in turn are followed through the various offices, in other words, from a squadron up to and including the functions of Wing and Post Engineering and Operations Offices.

The subject of military and technical phraseology is for the purpose of learning terms commonly used throughout the Air Corps and the proper use thereof. These terms include those pertinent to Aeronautics, Armament, Chemical Warfare, Electricity and Radio, Office Supplies and Equipment, and Photography. In addition to the technical terms, commonly misspelled, misused and incorrectly pronounced words are given in groups of one hundred each day. Following sufficient time for study, written recitation is given daily. This phase is for the purpose of preparing for the allied subject of Military Correspondence, in which the instruction adheres to regulations governing the preparation of military letters, indorsements, memorandums, telegrams, radiograms, orders, etc. Practice work in the different types of military communications is given, following completion of the manual thereon. In this practice work, much emphasis is given to maintaining strict compliance with the prescribed arrangement of matter in the communication and also included are exercises designed to develop excellence in the composition of the various forms of communication, particularly military letters. Particular emphasis is placed on spelling and phrasing in the composition, and neatness of the completed copy. The knowledge acquired in business English, which has been completed when the student reaches this phase of instruction, has been found very useful and helpful. Classes in military correspondence are conducted one period a day for sixteen weeks, and have been found very interesting and instructive to one who is familiar with correspondence, as well as one who contacts it for the first time while at this school.

Organization of the Army is taught with the thought in mind that a student understanding the size and functions of the various units in the organization can visualize the routine routing of correspondence and accomplished forms from the offices originating them to the office making the final decision or accomplishment. The text is prepared for the purpose of presenting, in convenient form, the announced policies and basic principles of military organization. It gives a brief outline of the general organization of the land forces of the United States, including a theatre of war. It presents in considerable more detail the organization of the General Headquarters Air Force, the Office, Chief of the Air Corps, and the Materiel Division.

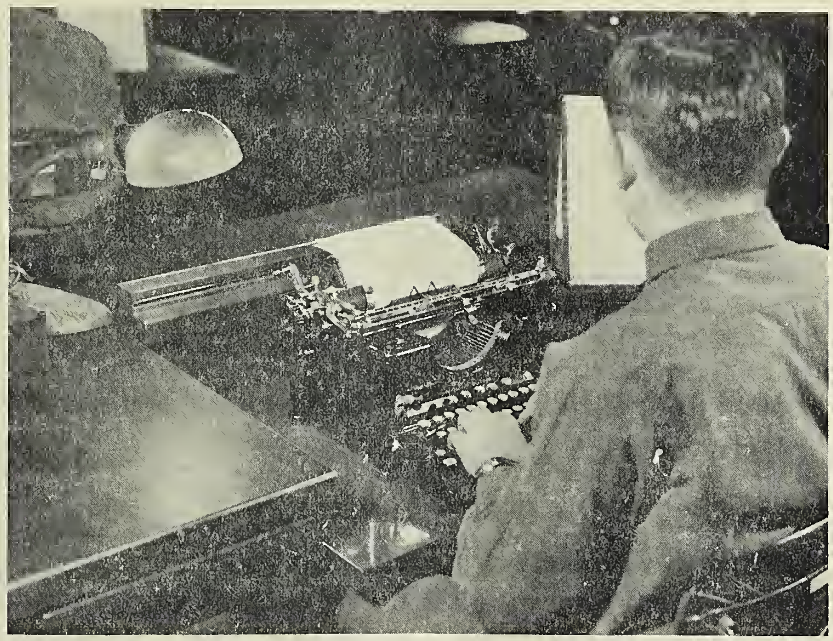
The Burroughs Bookkeeping machine, our most costly item of equipment, is an interesting phase of instruction. The student is impressed and interest maintained by the mathematical problems performed by slight pressure applied to keys and bars which control the various registers. Proficient typing is an asset toward developing a skilled operator. Practical work is given on all forms used in supply, which are accomplished by the bookkeeping machine. Upon completion of bookkeeping machine instruction, students are qualified in



"Gadget and Dodad" end of a Burroughs Billing Machine maintaining an Air Corps Stock Record account, which includes the intricate posting of credits and debits, and the recording of receipts and issues. In this phase of the course, practical exercises are given in the operation and use of the Burroughs Adding Machine and Monroe Calculator.

A system of shorthand easy to learn, read and write, and excellent in speed possibilities, namely Gregg, is taught. The elementary phase is varied by use of a shorthand reader, blackboard drills and shorthand penmanship. Dictation material in advanced shorthand represents a technical and business vocabulary. The importance of an accurate transcript is stressed and, accordingly, graded very closely for faulty transcription, spelling and punctuation. Success in this subject is dependent on the ability to instantly apply principles and rules in practical applied work. Completion of this phase renders the clerk capable of taking dictation at an average rate of speed, and opportunity is thereby afforded for acquiring further shorthand skill.

Typewriting is taught by the touch system. This means typing without looking at the keyboard, which is blanked. The blank keyboard tends to motivate the three essentials necessary to skilled typing, that is, accuracy, coordination and rhythm, as soon as training begins. Definite practical exercises in letter forms, telegrams, radiograms, manuscripts, bills, invoices, tables and statistical matter, and legal and business documents are accomplished, which create interest while operative skill is being mastered. This work is arranged and compiled in budget form. In advanced typewriting, each student is trained on Underwood, L. C. Smith, Royal, Remington and Woodstock typewriters, thus becoming familiar with the majority of standard types in use in the service. In the same phase, periodic tests are given to determine typing speed. A graduate should average forty to fifty words per minute, his exact typing speed having been ascertained by use of the International Typing



The keys are blank, so the "Hunt and Peck" system will not work here.

Rules, or the same rules used to judge professional typing experts.

Much stress is placed on the knowledge required of a clerk to correctly interpret instructions contained in Air Corps Circulars and technical publications. In this subject, the student must maintain a complete set of files on publications used in accomplishing his instruction, and, as a result, he not only learns to file these publications, but gains the practical experience necessary in keeping them posted to date. When this phase is completed, the majority of Air Corps Technical clerical work can be accomplished with little or no supervision, or on the clerk's initiative, which has been developed to a marked degree during the course.

In conclusion, the Department for Instruction of Air Corps Supply and Technical Clerks makes every effort to furnish the service an efficient and well-qualified clerk.

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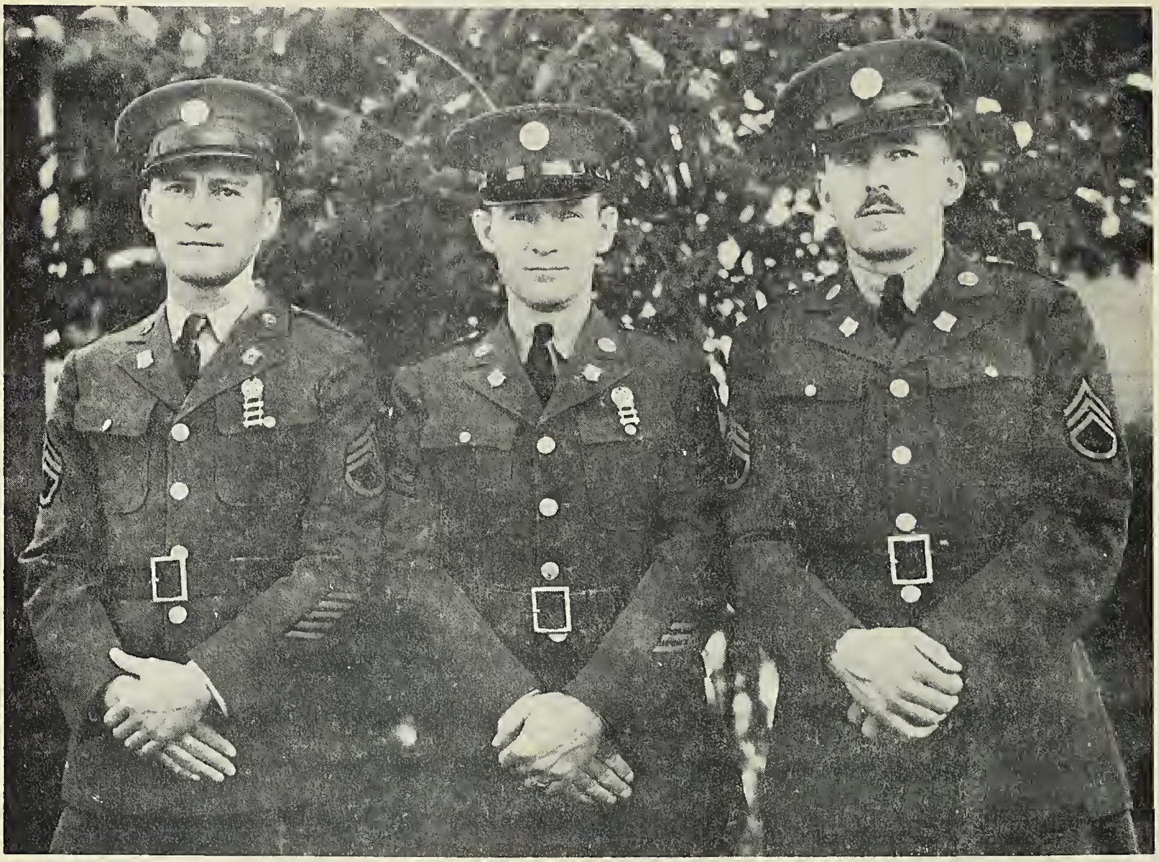
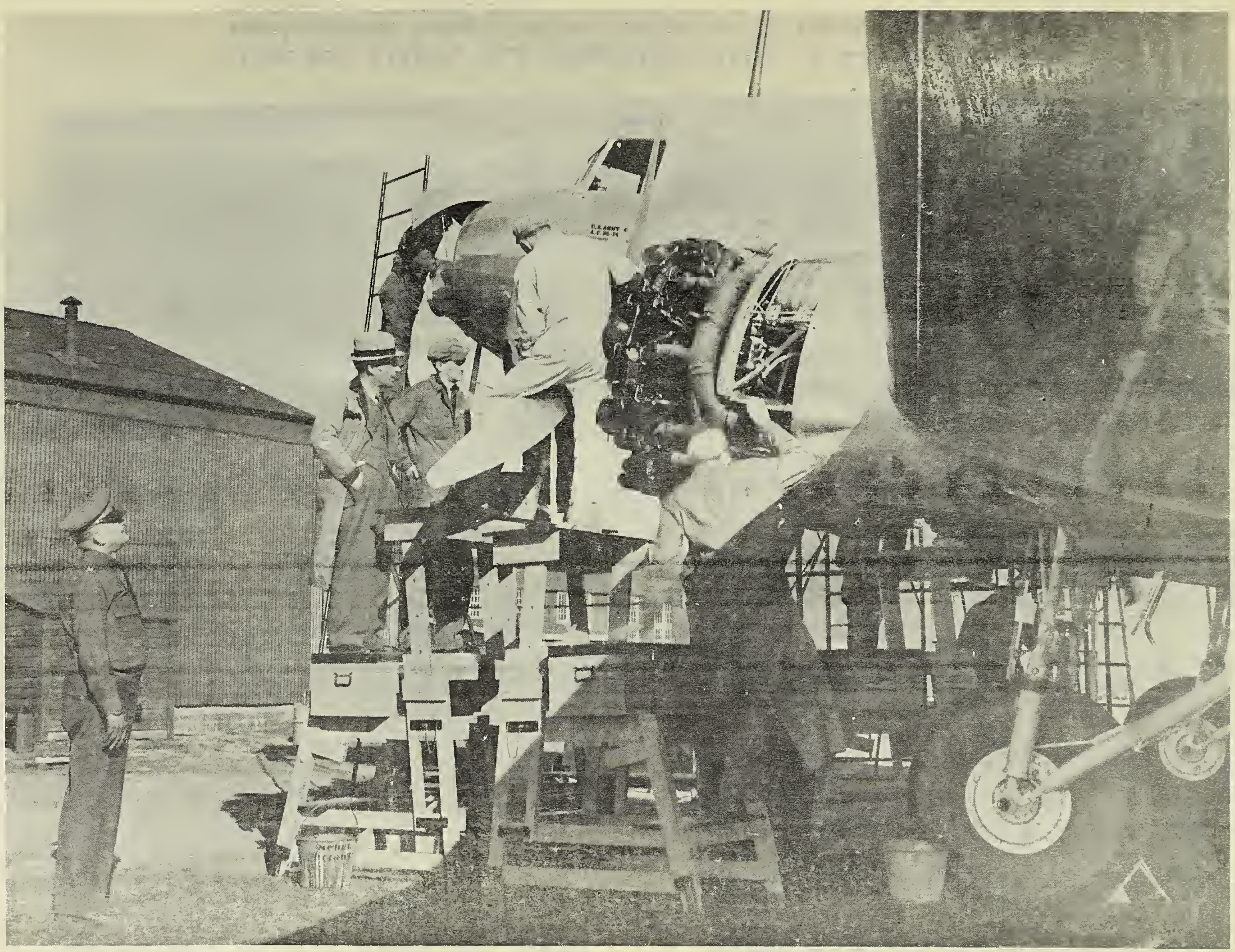
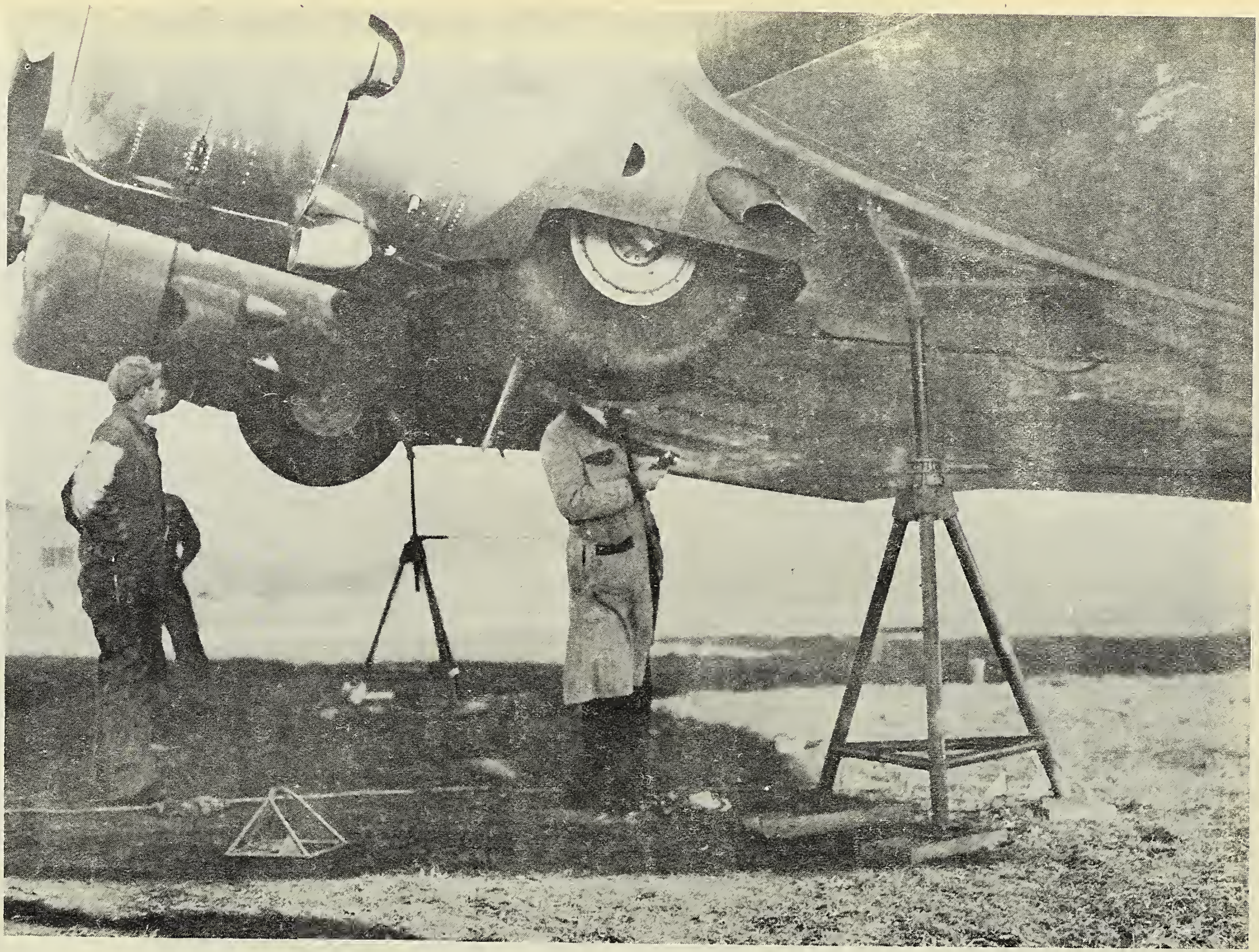


Enlisted Instructors

S.Sgt. E.L. Pond, Instr. Organization, Engineering, Operations, Supply and General Technical Administration; Sgt. R.C. Pierce, Instr. Office Machines and Supply; S.Sgt. K.S. Brown, Instr. Business English, Business Arithmetic, Military Correspondence.



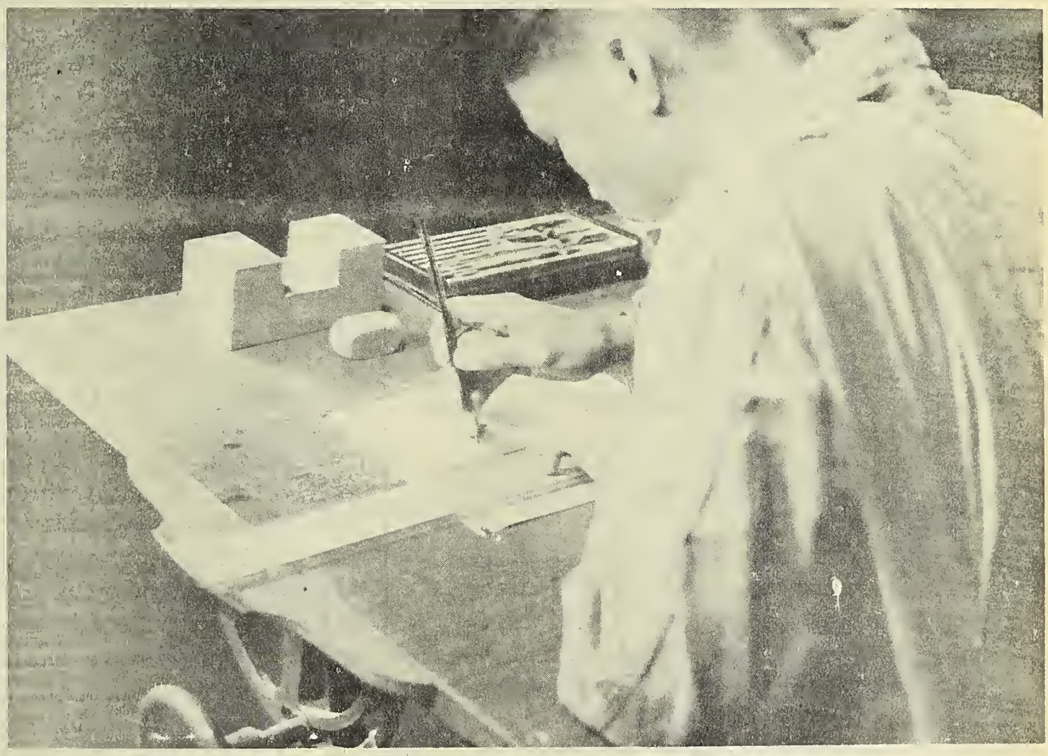
Major Harper watches Mr. Allen, civilian instructor, Propeller Division, instruct students on the proper installation of a propeller on the C-33.



"Look out, mister, that thing might bite!" A C-33 on jacks with wheels nested being given an inspection by instructors of the Department of Mechanics.

One officer and eight enlisted men of the Philippine Army are now attending courses at the Air Corps Technical School. The picture below shows one man working in Mechanical Drawing Course, Department of Basic Instruction.

"Now if I look at it this way", says Sgt. M. Alvarillo of the Philippine Army . . .



. . . "It should look like this on paper".

WHAT A MEMBER OF THE GHQ AIR FORCE STAFF THINKS ABOUT THE AIR CORPS TECHNICAL SCHOOL.

"Langley Field, Va.,
June 2, 1937.

Subject: Report of Visit to the Air Corps Technical School.

To: Commanding Officer, 2nd Bombardment Group, GHQ Air Force, Langley Field, Va.

1. On May 19, 1937, in accordance with authority contained in 2nd Indorsement, Hq. 2d Wing, GHQ Air Force, April 27, 1937, to letter, file 121.2 (3-19-37), Hq. 2d Bombardment Group, GHQ Air Force, subject: "Per Diem Orders", March 19, 1937, I proceeded to Chanute Field, for the purpose of visiting the Air Corps Technical School.

2. Upon arrival I reported to the Secretary of the School and advised him of the purpose of my visit. He expressed himself as much pleased with the idea and immediately made arrangements for the heads of departments to discuss their courses and problems with me.

3. All departments of the school, except the photographic and clerical, were visited. Lack of time precluded these two.

4. a. I was deeply impressed by the sincerity and capacity of the personnel assigned to the various departments. The instructors are men of proven ability in their own lines, many of them having been instructing from 15 to 20 years at the school. They are periodically detailed to duty to the Materiel Division and to various industrial plants related to aircraft and aircraft accessory development and manufacture, in order that they may keep abreast of the most modern equipment.

b. The equipment of the school is splendid, although some of the latest equipment (auto-syne instruments and automatic pilot in particular) were not yet available. Of especial interest was the setup for instruction in propellers and instruments. The Communications department has combined the best principles of civilian schools and the Army Signal School with the particular needs of the Air Corps to the end that their equipment is used to maximum capacity throughout the school year. The Armament section is thoroughly furnished with modern equipment even to include the latest bomb sight developments and the new M-2 .50 caliber machine gun.

c. Methods of instruction are thoroughly modern. The time devoted to theory is sufficient to enable the student to understand the "why" of the technical equipment studied. With this background the student progresses intelligently to the practical problems of the service and is thoroughly instructed by the applicatory method with splendid results.

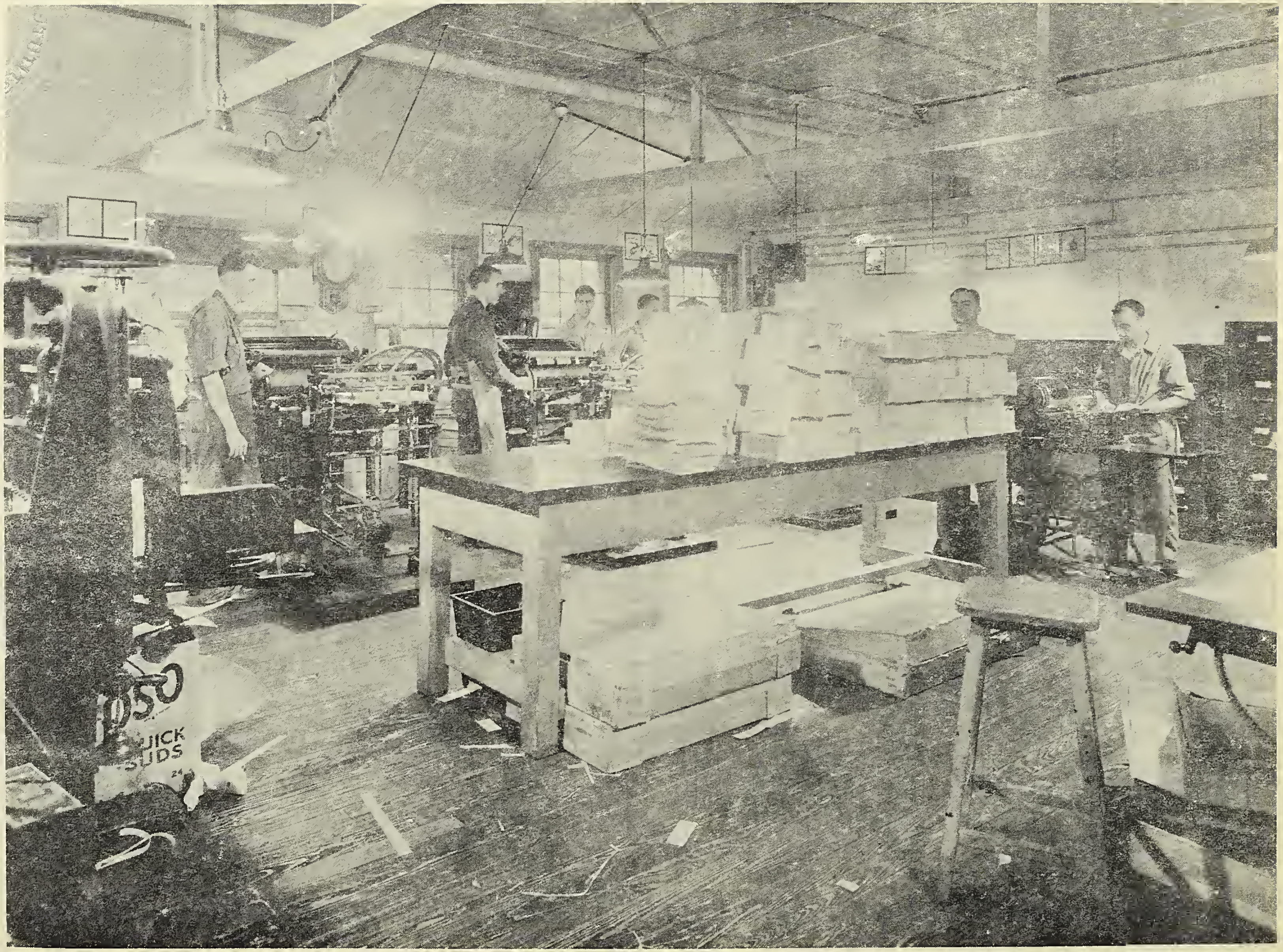
d. The caliber of the enlisted student has materially improved since the introduction of the entrance examination. There appears to be a demand by some officers that the standard entrance requirement be lowered. Apparently this demand is based on the fact that many non-commissioned officers and Air Mechanics are incapable of passing the standard examination and are therefore denied the privilege of attending the school. I am in complete agreement that this class of personnel should attend the school, but I am convinced, more than ever before, after this visit, that unless a soldier can meet the entrance requirement that his chances of satisfactorily completing the course are slight indeed. Obviously the answer is, then, that all classes of personnel prepare themselves for the examination, rather than lower the standards. There is at present in this Group one Corporal, Air Mechanic, who failed to complete the course at the school. The question arises, therefore, as to whether the requirements for the Air Mechanic rating are sufficiently high? Certainly, at first consideration, these requirements do not meet the standards of the Technical School. Further inquiry into this question by higher authority might be of value to the service.

e. Closely related to the above is the problem of selection of students. Rare indeed is the man with two or more enlistments who applies for a course at the school. This class of personnel is much more desirable than the recruit who so avidly applies. Inquiry into the reasons for the failure of older men to apply for the school is certainly in order and were discussed with the officers at the school. Careful consideration of this problem for the past four years and the discussion referred to above throws some light on the matter, and the probable causes follows:

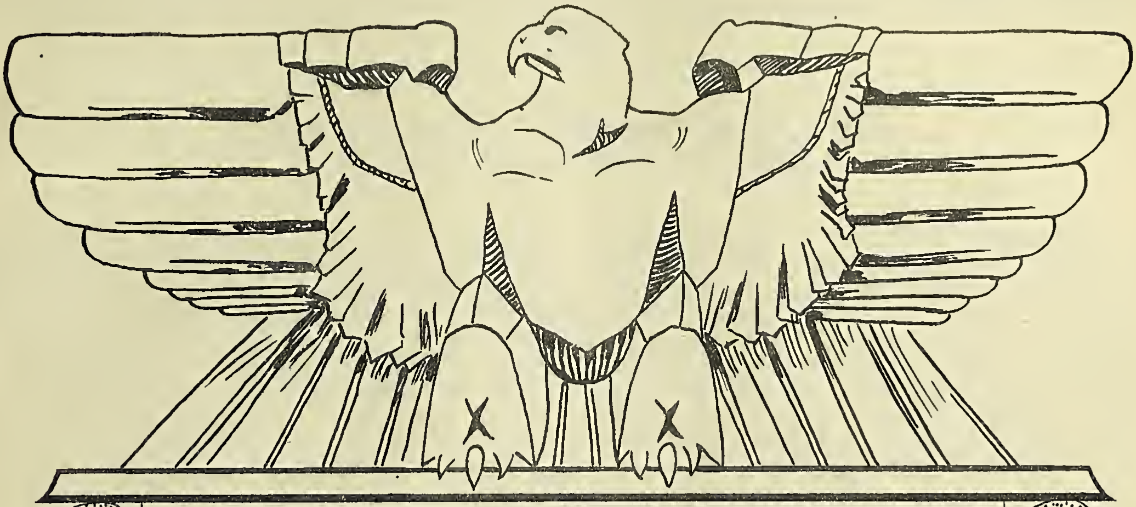
(1) Lack of knowledge by squadron commanders of the aims and accomplishments of the school.
(2) Tendency of squadron commanders (still existing in some units) to send to school men who do not readily adapt themselves to duty in the squadron.
(3) Failure of squadron commanders to impress on their men the necessity for high caliber technical training, if they are to successfully make the service their career.
(4) Hostility of squadron commanders toward "sparing" men of some ability who can perform duty in the organization.
(5) Feeling among enlisted men that their opportunities for promotion will suffer duing the period of their detached service. (A feeling that is probably justified).
(6) The knowledge among the men that they can qualify for the rating of Air Mechanic without taking the course.
(7) Loss of flying pay while attending the school.
(8) Heavy expenses involved in the case of married enlisted men.
(9) Deplorable housing conditions at the school. (Double deck beds are in use in war-time buildings.)
(10) The above discussed inability to pass the entrance examination or fear of loss of grade or rating if they fail to pass.
(11) Among older men in th grade of Staff and Technical Sergeant, the practical certainty of promotion to the next higher grade without the technical training that would make them really capable of meeting the responsibilities of those grades.

There may be other reasons than those listed above, but so far they do not present themselves. It should be pointed out that only (9) above requires Congressional action for correction. The remainder may be corrected with little difficulty by proper indoctrination of responsible personnel. I would recommend, first, that all station and group personnel officers and all squadron commanders be ordered to the technical school to familiarize themselves therewith; second, that all enlisted men be assured of their normal pay and promotion while at the school; third, that detailed information of the school be available to all enlisted men. (The excellent catalogue of the school meets this requirement and is available for .25¢ from the School Secretary.)

(Signed) John H. McCormick,
Captain, Air Corps,
S-1"



PRINTING DEPARTMENT
Producing the 4,000 copies of this Air Corps News Letter.



Air Corps News Letter

Issued by the Office of the Chief of the Air Corps
War Department, Washington, D. C.

Vol. XX November 15, 1937 No. 22

VOL. XX AIR CORPS NEWS LETTER NO. 22.
Information Division
Air Corps
November 15, 1937
Munitions Building
Washington, D.C.

The chief purpose of this publication is to distribute information on aeronautics to the flying personnel in the Regular Army, Reserve Corps, National Guard, and others connected with aviation.

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STANDARD AIRPLANE INSTRUMENT ARRANGEMENT
By Captain C. A. Ross, Air Corps

The ideal arrangement of the various instruments on the aircraft instrument board, for the purpose of best meeting the pilot's needs for all classes of flying, instrument or otherwise, has long been the subject of considerable discussion at the Materiel Division. To date it has been impossible for pilots to agree upon a definite location of even a few of the many instruments on the present airplane instrument panel. This condition is natural, since the use of the various instruments differs considerably with each particular flying problem. For example, certain instruments, necessary in making instrument landings, are rarely, if ever, used in normal instrument flying. The location, nevertheless, is important, and they must be so placed as to be readily observed by the pilot when needed. Thus, as with most engineering problems, the instrument board layout to meet all conditions becomes of necessity a compromise.

The existence of a definite need for the standardization of instrument arrangement, insofar as space limitations will permit, which will enable a pilot, in stepping into a strange airplane, to be reasonably sure that he can locate on the instrument board any particular instrument, is generally agreed upon. Likewise, it is quite obvious that, due to structural differences in the shape and size of different airplanes, all instrument boards cannot be made alike. If, however, the majority of the more important instruments are placed in the same general location on the panel, it is believed that a definite step in the right direction will have been taken.

Past specifications have prescribed certain general instrument arrangements. At present, airplane manufacturers are being given more definite instructions, particularly for those instruments used in instrument flying. There must, however, be a certain amount of elasticity to the requirements, especially in smaller airplanes where the area of instrument board space is extremely limited. But for all airplanes, large and small, the location of what is termed the "Flight Group" of instruments has been definitely prescribed. In the near future a pilot will be able to climb into any of the newer airplanes and near the top of the panel directly in front of his eyes he will see the Sperry turn indicator. Beside it on the same level will be the Sperry flight indicator. Directly below the Sperry instruments will be found the "Secondary Flight Group," namely, the airspeed, bank and turn and rate of climb indicators. To the left, either in the same row or as near as possible, will be found the sensitive altimeter. The magnetic and radio compasses will be conveniently located near the other flight instruments. The engine instruments will be grouped together in the same general pattern with the tachometer as near as possible to the flight instruments. The remaining instruments will be placed as best suits the particular design of airplane, the location being more or less optional with the designer.

This basic arrangement of instruments is the outgrowth of the suggestions of many pilots and is considered to have sufficient merit to warrant standardization at this time.

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AERIAL PHOTOGRAPHY FOR EXPOSITION

Hamilton Field, San Rafael, Calif., is playing a small but important part in the development of the Yerba Buena Shoals ("Treasure Island") for the Exposition to be held in 1939. The actual development of this man-made island is in the hands of the District Engineer, Corps of Engineers, U.S. Army, at San Francisco, whose eyes have been multiplied through the use of aerial photographs made by the 88th Reconnaissance Squadron.

Although nothing could be further from the destructive elements of war than the engineering feat being accomplished on this site, the cooperation between the ground branch, the Corps of Engineers, and the aerial branch, with the Air Corps doing the reconnaissance necessary for the ground operation, is a feat which would be duplicated many times in case of war. That this close cooperation between the two branches can be maintained in time of peace bodes well for future co-

(Continued on Page 2).

TEST OF B-17 "FLYING FORTRESSES"

During the first two weeks of October, the Second Bombardment Group, Langley Field, Va., was engaged in a comprehensive and accurate test of the range and efficiency of the B-17 airplane under different load and speed requirements. The results have been most gratifying.

Each airplane was loaded with fourteen 300-pound bombs, normal fuel and normal crew. Take-offs were arranged for 2:00 a.m., so that the bombs could be expended at daylight after four hours' flying at 200 miles per hour.

For the most part the course flown was over water and with no visible landmarks, except an occasional light along the shoreline, from 20 to 50 miles distant. Winds of gale velocities were blowing during the first night's mission, so the navigation necessary was a problem in itself. All B-17's remained in the air under normal tactical conditions for twelve hours or more, a feat that would have been impossible in any previous type of airplane.

The crew accommodations on these ships are such that flight personnel suffered no undue hardships or fatigue. Occasional relaxation in an Arctic sleeping bag, or a sandwich with a cup of coffee, helped to keep the crew efficient and alert, and did away with the usual sluggishness and slow reactions which are so noticeable in pilots who have made a long and exhausting flight.

As Colonel Echols, Chief of the Engineering Section, Materiel Division, said: "Pilots are just beginning to become conscious of intelligent use of their power plants to obtain the greatest efficiency and life out of them."

That is what the Second Bombardment Group is striving to obtain - data which will be reliable and accurate. With four engines instead of one or two, a slight increase in efficiency means many more miles in range.

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Aerial Photography for Exposition

(Continued from Page 1).

operation in more deadly and serious circumstances.

The 88th Reconnaissance Squadron of the GHQ Air Force photographs twice monthly the exposition site, both obliquely and vertically, and submits the pictures to the District Engineer in San Francisco for positive evidence of the progress made during the period.

The photographs just recently taken were made by Private Henry F. Stapel, who was piloted by 2nd Lieut. Ted S. Faulkner, both of whom are members of the 88th Reconnaissance Squadron, which is stationed at Hamilton Field, San Rafael, Calif.

PROMOTION OF AIR CORPS OFFICERS

The following-named Air Corps officers were promoted to temporary rank, as indicated, as of October 12, 1937:

Lieut. Colonel to Colonel

John C. McDonnell

Major to Lieut. Colonel

Lester T. Miller
Arthur B. McDaniel
Francis M. Brady
Arthur E. Easterbrook

Captain to Major

Guy Kirksey
Thomas H. Chapman
John M. McDonnell
Angier H. Foster
Harry H. Mills
Edwin Sullivan
John R. Drumm
Oliver K. Robbins
John R. Glascock
Charles G. Brenneman
George V. McPike
George G. Cressey
Clarence E. Crumrine
Russell H. Cooper
Ray L. Owens
John S. Gullet
Henry G. Woodward
John R. Morgan
Roscoe C. Wriston
Chas. E. Thomas, Jr.
James B. Jordan
James C. Shively
James C. Cluck
William N. Amis
Harold H. Carr
Rufus B. Davidson
Stanton T. Smith
Evers Abbey
Joseph P. Bailey
Clarence F. Horton
Raymond R. Brown
Wm. J. McKiernan, Jr.
Edwin R. McReynolds
David G. Lingle
Robert M. Webster
Sigmund F. Landers
Milo N. Clark
Harrison G. Crocker
Ned Schramm
Jesse A. Madarasz
Edward M. Robbins

The following additional Air Corps officers received temporary promotions, with dates of rank as indicated:

Major Warner B. Gates to Lieut. Col. from October 19, 1937.

Captain Jack C. Hodgson to Major, from October 13, 1937; Captains Stanley M. Umstead, James W. Hammond and Charles Backes, from October 14, 1937, to Major;

Captain Ray G. Harris to Major, from October 21, 1937.

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REINFORCED LANDING MATS NOW A NECESSITY

Work on the reinforcement of the landing mat at Hamilton Field, Calif., is virtually complete, with only the marking left undone. With the advent of the huge, heavily loaded, Bombardment airplanes now in use by the GHQ Air Force, the whole mat was rapidly being literally beaten to pieces. With the reinforcement, however, and the extension which is now under way, the mat will withstand the severe punishment inflicted by even the heaviest airplane.

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The pilots' day room of the 33rd Pursuit Squadron, Langley Field, Va., recently became a classroom for the junior officers of the 8th Pursuit Group, who will be subjected to an extensive five months' course in practically everything that is military and aeronautical.

AND I LEARNED ABOUT FLYING FROM THAT

By Lieut. Oxygen

ONE of my first cross-country trips was from Maxwell Field to Knoxville, Tenn., in a PT-1, powered, or underpowered, as you choose, with a 180 Hisso. It was a beautiful Sunday afternoon, and I was flying along at what I considered a reasonable altitude, about fifty to seventy-five feet. I was following a concrete highway which was lined with Sunday traffic. My speed was slightly in excess of the automobiles but not so much that I couldn't wave and signal to anyone appealing to my fancy. I had been doing this for some little time, perhaps an hour, when in the distance loomed the new Loudon, Tennessee, bridge. It was a beautiful structure freshly painted gray and possessing a high overhead arch. The river followed the highway for a distance before it made a left turn under the new bridge. Suddenly, the thought struck me - the crowd on the highway would be thrilled "pink" if I lowered over the river and followed it under the bridge and under them. I had flown under bridges before, having gone under the one near Maxwell numerous times. There was nothing to it - just put the wheels a foot or two off the water and let her go under ---.

All eyes along the highway were upon me and my mind was made up. Carefully I swung over and got down a few feet above the river and followed the river around a gentle turn to the bridge. As I came closer I could see that I had room to spare in clearing the piers and floor of the bridge. I was in my glory, knowing the crowd was breathlessly watching as I came beneath them. I carefully approached within a hundred or two feet of the bridge, my main attention being paid to the distance above the water which, as mentioned, was about two feet. Suddenly, my heart sank - immediately in front of the bridge, directly ahead, hung an old ferry cable, completely blocking my path. Had it hung high or low I would have tried to dodge it, but it was half way, leaving me no chance. It was a huge cable or I would never have seen it, and I knew that to hit it would mean disaster.

The only thing I could possibly do I did - I stood the old PT on its tail and missed the overhead structure of the bridge by inches, ending in a complete stall. From there I managed to fly on away with the airplane strapped to me, and the last the people on the highway saw of me was a small speck in the sky.

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NO FORCED LANDING IN THREE YEARS

In setting forth the activities of the 4th Observation Squadron, Luke Field, T.H., the Scribe of that outfit states that one record it is proud of and which seemed to surprise inspecting officers is that there have been no forced landings in the Squadron since 1934. "We have our fingers crossed," he continues, "and hope the Engineering Section keep up their good work."

Touching on the work of the 4th Squadron early in October, the News Letter Correspondent states that the organization "has been busy trying to get in its department training. Besides all the other activities, we got in one day of practice aerial gunnery last week. On Friday, the 8th, General Westover inspected the post, and the quarterly load test followed. For the first time in several weeks we had all our planes in commission and had to use one attached pilot to get them all in the air for the test. Also Lieuts. Thatcher and Cannon graduated from the Wing Navigation School the same day and now we have two expert and fully qualified navigators. Monday, the 11th, the Squadron went to Hickam Field with the Group, so that our visiting Congressmen could give us a once over in a ground inspection, after which the Group flew in formation over Honolulu and the transport which was in the harbor then. Wednesday, the Inspector from the Office, Chief of the Air Corps, came around to look over all our records and airplanes. There was a review Thursday, the 14th, at Division Review Field, Schofield Barracks, after which we hope to get back to our regular work and training schedule. There is some speculation as to which squadron officers will take the course in navigation which will be taught in the Squadron under Lieut. Lindsay's supervision."

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We are glad to have the contribution at the top of this page under the heading of "And I Learned About Flying From That," which was received from the Air Corps Materiel Division, Wright Field. Whether you sign your article as "Lieut. Oxygen," "Captain Airfoil," "Major Overhaul," or what have you, we would appreciate your sending in to the News Letter any story regarding one or more incidents in your flying experience which, because of the lessons you learned therefrom, still linger in your memory. Please remember that a recital of your experience may prove very helpful to younger and less experienced pilots in the Air Corps and may save them a lot of grief. Just send in the facts if story writing is not your forte - the trimmings will, if necessary, be added in the editorial office.

A REVIEW FOR THE PRESIDENT AT FORT LEWIS

The garrison at Fort Lewis, Wash., was honored with a brief visit on October 1st by the President of the United States, who was enroute to his special train in Tacoma after completing his tour of the Olympic Peninsula. All ground troops of the post were turned out on the main highway, and a review formation was flown by the 91st Observation Squadron. The Presidential party did not arrive at Fort Lewis until after dark, but this did not deter Colonel Oldfield, the flight leader, from his purpose. The Squadron passed in review over the President and his staff, and was given commendable praise by the President for its participation. "Within the knowledge of our personnel," says the News Letter Correspondent, "this is the first time a night review has ever been given by the Air Corps in honor of any personage."

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POWERFUL "HAM" STATION AT HAMILTON FIELD

One of the most powerful amateur radio stations on the west coast is now under construction by two licensed amateur operators of the 88th Reconnaissance Squadron, Air Corps, at Hamilton Field, Calif.

The set, operating on 40 and 80 meter continuous wave, will have 500 watts of power in the civilian amateur system, as well as in the Army Amateur Net, in which it functions as a station of the Third District under the call letters W6NQR. It is the only station in the Army Amateur Radio System at Hamilton Field.

Built entirely by Corporal John B. Crouse and Private 1st Class Jack K. Prewitt in their spare time over a period of many months, the station will be on the air by November 15, 1937, capable of CW transmission to anywhere in the world. Both operators, who have held amateur tickets for several years, will welcome a call from any station anywhere.

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MORE ATTACK PLANES PURCHASED

The Honorable Louis Johnson, the Assistant Secretary of War, announced on November 9th that the War Department had awarded a supplemental contract to the Douglas Aircraft Company of Santa Monica, Calif., for 29 additional Model A-17A Attack airplanes at a cost of $654,155.90. These new planes are in addition to similar aircraft now being built for the Army by this Company. These planes will be constructed at the factory of the Northrop Corporation, Inglewood, Calif., a subsidiary of the Douglas Company.

They are low-wing monoplanes, with provision for a crew of two - pilot and gunner - and powered by a Pratt & Whitney two-row engine developing more than 750 horsepower, furnished by the Government. The plane is capable of cruising over 220 miles per hour and of maintaining that speed for eight hours. It carries four fixed .30 caliber and one flexible .30 caliber guns, and is designed to house 20 small bombs internally or 4 of larger type swung outside.

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PURCHASE OF BASIC COMBAT PLANES

Announcement was made by the Hon. Louis Johnson, the Assistant Secretary of War, on November 8th, that the War Department had ordered 95 basic combat planes and spare parts of a total value of $1,490,972.96, from the North American Aviation, Incorporated, of Inglewood, Calif. The order was placed by taking advantage of an option in a procurement contract now in effect with this company. The purchase of these additional planes results in a considerable reduction in the price per plane.

The basic combat airplane is a low-wing cabin monoplane, with tubular steel, fabric covered fuselage and metal wings and stabilizers. It is equipped with flaps to act as air brakes on landing; a retractable landing gear to decrease head resistance in flight; and likewise with an automatic controllable pitch propeller. It is powered by a Pratt & Whitney single-row radial engine of 550 h.p., furnished by the Government.

This plane has comparatively low landing speed and should be able to operate from small unimproved landing fields, thus making it an excellent plane for use as a courier plane. While not specifically designed for observation work, it can be used for that purpose if necessary. It carries a crew of two, has a two-way radio, all necessary instruments, landing lights, etc., and is provided with necessary fittings for mounting an aerial camera. Its primary use, however, is in courier service.

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WIVES SHOW SKILL IN HEAVING ROLLING PIN

During a recent celebration of Organization Day by the 9th Bombardment Squadron of Hamilton Field, Calif., one of the events of the day, and which attracted more interest than any of the others, was a rolling pin throwing contest by all wives, which was won by Mrs. Prince, wife of Sergeant William Prince, with a beautiful overhand delivery which almost demolished the target. This contest was keenly followed by the married men, who were probably eager to find out what their chances of slipping in at the wee hours in the morning and still living were. Everybody offered Sergeant Prince condolence.

GENERAL MARTIN'S ADDRESS TO GRADUATED FLYING STUDENTS

ADDRESSING the members of the graduating class of the Advanced Flying School, Kelly Field, Texas, on October 6th, last, Brigadier General Frederick L. Martin, Commanding General of the Third Wing, GHQ Air Force, stated:

"I hope that the guests present will pardon me if I talk directly to and for the benefit of these splendid young men in this graduating class. You have completed one year of intensive training with its trials and tribulations to you, in which you have seen some of your friends fall by the wayside. This, of course, reflects no discredit upon them at all, so you are entitled to honor and distinction upon having achieved this success, and I wish to extend to each and every one of you my heartiest congratulations. While you were receiving your instruction you were under the careful supervision and guidance of experienced officers associated with training activities. Adhere to those instructions throughout your military career. And you can well adhere to them throughout your life. Never forget them and never violate them.

Now I wish to speak to you as if my own son - who is almost your age, not quite - were in one of your shoes. And while I know that advice is seldom welcomed, it is those who need it most that like it least. So I hope that whatever advice I give you this morning you will not be so badly in need of it but what you will like it. I need not speak of your past. Each and every one of you know your past better than any other living soul. I cannot predict your future. I might help you by giving you an insight as to what may be in the future for you when you leave for your next station. If I can do so in a helpful way I will be delighted.

When you report to your new station you will be assigned to duty in some of the organizations thereat. You will first be given transition on that particular type of equipment, prior to which you will be expected to study and to master it. That means repeat many times the technical instructions which pertain to that particular equipment. Then your transition will be under the supervision of older officers, after which you will be assigned to a wing position under the guidance of an element leader - very much as you were flying today. In addition to that, you will have certain duties on the ground. Those duties will be as assistants to squadron adjutants, engineer officers, supply officers, communications, or wherever you may be needed. You will probably be shifted around some after you are assigned to duty, this in order that you may get a general grasp of the situation. Those assignments are extremely important to you, especially to your future, so get all you can out of them. Dig deep into those instructions associated with that particular department, so you know it thoroughly.

It is hardly necessary to mention to you young men, but loyalty is very essential, and I hope that you have a very keen sense of loyalty. You must be loyal to your superiors, and first you must be loyal to yourself. You must be considerate of those that are assigned for your supervision. You are now officers, and that carries with it a very serious responsibility. You are responsible for guiding the efforts of those under you. You are also responsible for being an officer and gentleman at all times and all places; that is, both on and off the military reservation. You must never bring discredit to the service. In obedience - I only wish to say always make it willing obedience. Do not obey halfheartedly. Do exactly what you are told to do, even though you do not believe in it at all. If you feel that it is so wrong it should be rectified, take it up with your superior officer after complying with your orders. It behooves you to put forth your very best efforts at all times, regardless of how trivial your assignment may seem to you. Do not neglect it, give every bit of your energy, thought and care; give it the best attention you know how. You are going to be under surveillance. They are going to observe and mark those of you who are meticulous in the performance of your duties; who can be trusted. I hope that each and every one of you can be in that category.

A great number of people- and I think this is quite true of young men as well - allow themselves to be unnecessarily disturbed mentally over little things which, after they have passed, you realize were of little or no consequence. Do not harbor in your minds those things which annoy you; throw them off. It has always been my policy to try to determine what misfortune might come upon me and to do everything I can prior to its happening to keep it from happening. But should it occur, you having done all you can - you can do more - dismiss it from your mind and look into the future. You may think that is trivial; it is not. A great many people build up a mental attitude that is just as wrong as it can be, and it has a habit of accumulating. So don't allow yourself to be annoyed.

We are always harping on excesses. There is nothing more harmful to our future, our good health, our enjoyment of old age, our appreciation by our friends, and our standing in our community than being harmful in excess. That applies to eating, drinking, working, and to recreation. There are probably more people in this country who are suffering from poor health due to excesses than from any other cause.

Now in flying there are times when certain anxiety exists as to your outcome or your safety. I know from my own experience, and you probably have had it yourself. I am sure you have. The thing to do under those circumstances is to get control of yourself. Do not allow confusion to interrupt your normal train of thought, and consider what is best for you to do under those circumstances. I have always tried to have in my mind all those things which might happen to me that might be unfortunate. When I have plenty of time to do so, I consider how I could best extricate myself from such a predicament. Then when the emergency comes on, you already have a carefully thought out plan to grab right out of your memory and put to use. Do not deviate from it because of the fact that you may be excited at the time. Now anxiety is good for nothing if we cannot turn it into a defense, so when I stated to you to be prepared for that emergency it was as a defense from these anxious moments.

I wish to speak of the living conditions which you will find at your new station. I cannot speak exactly, because I do not know where you are going. I can say this: that the accommodations for officers at all of our air fields are becoming more crowded at all times, and unfortunately when they put officers on rental allowance they usually take the junior officers. So no doubt they will be picking on you. Your rental allowance will be only $40.00 per month. That may seem quite a lot of money to you, but try to find a place to live in the vicinity of some of our air fields and you will find that $40.00 will not rent a good place. If you are a bachelor you can get along very nicely. I hope I am not discouraging any of you young ladies.

I would like to say this for your future: select an ideal. An ideal is like a horizon, you keep striving to approach it but never get near it. Your ideal should be the best accomplishment, best traits of character, of many men. They do not all exist in any one man, but if you will try to emulate those qualities which you admire in others they will have a decided effect upon you as an individual. You want to remember that behavior is like a mirror in which everyone displays his image. People seldom improve when they have no model but themselves to copy after.

Now you are all - excepting those that have commissions - very much interested in your opportunity to get a commission in the regular service. I can give you no definite statement at this time. I will only mention to you the trend that exists. Today our procurement program for airplanes is far ahead of our procurement program for pilots. It will not be many years until we will have a decided shortage of experienced pilots. This Training Center is the only crucible from which we can obtain that material. The necessity will exist for trained pilots, and particularly those that can remain with us definitely. At the present time in our tactical organizations the grade of 2nd Lieutenant is in a constant state of flux. There is very little permanency to it, except for those who succeed in graduating from this school and who are graduates of West Point, to provide those to come forward to take the place of those of us who are going out at the top. It is a condition that will eventually, I am sure, be corrected.

Be frugal in your habits. Whatever you do, budget. Stay out of debt, fight it with all your force. There is no habit so gratifying to a man as always paying his bills and having a little money to call his own. I advise you to start today and save $5.00 each month. That doesn't mean much now, but it will seem a lot in your new surroundings and in a few years time it amounts to a lot. It gives you an entirely different attitude toward life than if you are carrying upon your shoulders a burden of indebtedness that weighs you down.

The provision, as I remember, at the present time makes it possible for those of you just receiving your commissions to take out government life insurance within 120 days. Do not let that time elapse until you have some government life insurance. When you get further along you should have additional insurance. That is a protection for you, your relatives and your families.

Now your character - which you can't keep from anyone. That is in your face. You can develop it to some extent; you can improve on what you have. The definition for character is a perfectly educated will. Keep it as high as possible.

The remarks I have made are the result of my experience and observation over 29 years of service. You are under no obligation whatever to accept these statements without due consideration as to their value to you. I would feel bountifully repaid for the opportunity to make this address if I have made some contribution which might be helpful to you in achieving greater renown for yourself or make it possible for you to gain a greater proportion of happiness in living. When the going gets heavy and the skies are dark you may all exercise that quick judgment and tenacity of purpose which will insure you bringing your ship safely in to its home port.

May God be with you and protect you. Your destiny is in your own hands."

HITTING THE HIGH PLACES WITH THE MODERN AIRPLANE

Time: 7:30 a.m., Monday.
Place: Hamilton Field, Calif.
Action: Captain Julius T. Flock, member of the 31st Bombardment Squadron at Hamilton Field is explaining to his commanding officer a two-hour delay in a flight from Salt Lake City to March Field. Captain Flock left Salt Lake early in the morning on one of the first test flights made at Hamilton Field of the new Douglas B-18 Bombardment plane, and arrived at March Field two hours overdue.

"Well, Major, it was like this. I had heard that these new planes fly far and fast, but after all I had never flown anything newer than the Martin. So I started out from Salt Lake, figuring the usual speed and time, and off we went. We had just barely gotten our altitude and had gotten all set for the long run when I saw a bunch of lights flash past below me. 'That's funny,' I thought, 'there's no city here,' so I kept right on my course.

"I flew for two more hours without seeing a city down below or even a single light. By this time I should have been fairly close to March Field, but knowing how accurately I had figured my course I wasn't a bit nervous, and - sure enough - my confidence was rewarded when a few minutes afterward the lights of a little village stared up at me through the haze of the dawn.

"I circled the town once, twice, three times, before I realized that I had never seen this place before - surely this wasn't March Field. Hurriedly I checked my course and computed my time - this must be March Field! So, I landed in a large field adjacent to the town.

"I filled out my Form 1, stepped out of the plane and was waiting complacently for the Officer of the Day to come and meet me, when WHAM! - an eight-foot spear embedded itself in a tree, beside my ear. 'Well,' I thought, 'This is a funny way to greet a stranger,' so I dusted off my captain's bars and immediately sought to find and chastise this individual who would treat me so, after such a daring flight. Did I find him? I did not. I found a little brown pixie, who barely came up to my waist, wearing a more outlandish grass shirt than you have ever seen.

"'Here, here, son,' I said, 'is that ny way to greet a visiting fireman?'

"'Blublublub,' said the runt.

"I grabbed the little pixie by the scruff of the neck and shook him until every protruding tooth quivered and shivered like jelly.

"'That will teach you to keep a civil tongue in your empty little head,' I said, letting him down.

"Off goes the pixie on a dead run. 'My, my, what a queer place,' thought I to myself, as I started off toward the town.

"After a few minutes walking underneath the palms of sunny Southern California, I came upon the queerest little town you have ever seen. There were about a hundred little grass huts surrounding an open spot, with two wooden buildings just outside the circle. I knocked on the door of the smaller wooden building and a priest came to the door.

"'Good morning, father,' I said. 'Perhaps you can tell me where I am. I hardly believe this is March Field.'

"'No,' said the priest, 'this is Suva in the Fiji Islands and I have never heard of March Field. You are just in time to attend my Sabbath services, my son.'

"I said, 'You must surely be mistaken, it says right here in the book that this is March Field, California, and I know it's Monday.'

"'Well,' said the priest, 'you can call it March Field if you like, but I have been here twelve years Christianizing these cannibals and I call it Suva.'

"Such badinage weighed heavily upon my shoulders at such an early hour, so when the father invited me in for breakfast, I accepted with alacrity. But when another little pixie brought out a bowl of poi, 'My Gawd,' says I to myself, 'he must be right,' and then it dawned on me that I hadn't allowed for the speed of the newer plane.

"Back I tore to the field, warmed up the ship, gave her the gun and retraced my steps across the international date line. One hour and fifty-five minutes later I came upon March Field, which I had thought on my first flight over it was a suburb of Salt Lake City. So, I landed two hours late, but I found out what it is to fly a really fast airplane."

Of course, the fact that there was a fifty-mile per hour head wind might have had some bearing on the fact that Captain Flock was two hours late.

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"A great deal of our aerial firing these days is being done at an altitude of 15,000 feet," says the Correspondent of the 36th Pursuit Squadron, Langley Field, Va., and he then adds: "After the first one or two attempts, we have been able to compensate for the somewhat mushy feel of the controls at that height and concentrate on the targets, with the result that the targets came down in ribbons and the pilots came down frostbitten."

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Major Lotha A. Smith (Captain), Air Corps, was promoted to the permanent rank of Major, as of October 19, 1937.

TRAINING FLIGHT BY 17TH ATTACK GROUP

On one occasion recently, 21 A-17A's of the 17th Attack Group, composed of a Headquarters squadron of three planes and three tactical squadrons of six planes each, took to the air on the first leg of an extended unit navigation flight. Although originally scheduled to arrive at Fort Leavenworth, Kansas, from March Field, Calif., on the first day, which was on a Friday, the flight was delayed overnight at Albuquerque, due to a failure in the power lines which operate the electrical servicing system at the Municipal Field.

The Group took off from Albuquerque on the following day and proceeded to Fort Leavenworth, where the first mechanical trouble was encountered - a broken exhaust valve stem. Fortunately, a new valve was obtained and installed during the night, allowing the flight to continue as a unit.

The next leg of the trip took the Group to Selfridge Field, where it was found necessary to replace a leaky three-way gas valve and an oil pressure relief valve spring. While at Selfridge Field, various items of swimming and fishing equipment were returned to pilots of the First Pursuit Group, who had inadvertently left same at Muroc Dry Lake during their outing last May.

After an extremely pleasant night's stay at Selfridge Field, the 21 planes took off for Patterson Field, where full advantage of a day's stop over was taken to inspect Wright Field. As might be expected, the interest of the enlisted men and officers centered particularly on the experimental planes and engines undergoing tests. Informal talks with the personnel at Wright Field did much to apprize the visitors of the difficulties encountered in developing new and satisfactory types of equipment to meet the growing demands of the Service activities and allow them to appreciate the thoroughness with which each piece of equipment is tested.

On the morning of Wednesday, the flight took off for Maxwell Field to visit the Air Corps Tactical School. Enroute, a two-hour stop was made at Nashville, Tenn., where the Group personnel assisted in the dedication of a new Municipal Airport in that city.

The next stop was Barksdale Field, bailiwick of the Third Attack Group. The general impression of Barksdale Field was that, in addition to being one of the largest military airports in the world, it is one of the most attractive. This impression may have been influenced by the cordial reception given the visitors by the personnel stationed there.

Leaving the green fields behind, the Group next pointed for Biggs Field, El Paso, Texas, one of the Air Corps' important transcontinental stops. After a thoroughly enjoyable overnight stay at Fort Bliss, the 21 planes left for March Field, arriving there in good order at noon on Saturday.

The entire flight was so arranged as to provide training in the various types of problems required of Attack Aviation. Rendezvous problems were flown, the rendezvous points in all cases being from six to eight hundred miles from the starting point. Attack and navigation flights were assigned the various units. Emphasis was placed upon the accurate timing of arrival at a designated point and, to the credit of the 17th Group, it may be said that their work was excellent. Simulated attacks were conducted.

Another purpose of the flight was to acquaint the personnel involved with the activities of other Air Corps stations and schools at Leavenworth and Maxwell Fields, at which places the stopovers were most enjoyable as well as instructive.

The flight also served to furnish an accurate idea of the maintenance difficulties that might be expected on an extended trip involving a large number of airplanes. Aside from the three replacements of parts previously mentioned, no difficulties were encountered. Spark plug trouble was noticeable by its complete absence. From a maintenance standpoint, the flight was a fitting tribute to the practical value of the maintenance system as conducted by an efficient, intelligent enlisted personnel, and attested to the excellent quality of equipment furnished by the Materiel Division.

In all, a total of 665 hours of flying was completed in various phases of training. The average gas and oil consumption per hour for the flight was 40 gallons of gas and 5.5 quarts of oil per plane. The day and hour schedule was strictly adhered to, except for the delay occasioned at Albuquerque by the failure of the gasoline servicing system.

Aside from the training involved, the flight was a complete success socially, a cordial reception being extended by all stations visited.

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The Second Bombardment Group Navigatio School, which was formerly conducted by the 21st Reconnaissance Squadron, was on September 30th transferred to the Headquarters and Headquarters Squadron, 2nd Bombardment Group, GHQ Air Force, Langley Field, Va. First Lieuts. J.W. Egan, Senior Instructor, and C.H. Rees, Assistant Instructor of the Navigation School, were also relieved from assignment to the 21st Reconnaissance Squadron on Septembe 30th and assigned to the Headquarters an Headquarters Squadron of the Second Bombardment Group.

THE CRASH OF THE C-27A TRANSPORT PLANE IN PANAMA

Further reference is made to the crash near Aguadulce, Panama, on August 3rd last, of the C-27A Transport plane, piloted by 2nd Lieut. Thomas J. Schofield, Air Reserve, a brief account of which appeared in a previous issue of the Air Corps News Letter. It will be recalled that the pilot and his five passengers reached the ground safely through the medium of their parachutes.

It is interesting to note that while these men landed only about eight miles north of the National Highway, it took them almost two full days to reach this highway, and they were not returned to their home station until the third day, this because of the nature of the terrain over which they were flying. Had they landed south of the National Highway, they would have been in a position to have been picked up very soon after landing. This is an indication of the nature of the country in Panama.

Lieut. Schofield has submitted a particularly interesting narrative report on this most remarkable accident and, under the belief that this report will prove of interest to all Air Corps personnel, it is quoted below, as follows:

"At 1:10 p.m., August 3, 1937, I took off from Albrook Field, Canal Zone, in the Bellanca with seven men, some provisions for the Gunnery Camp at Rio Hato, and baggage and equipment belonging to three of the men who were leaving for a thirty-day hunting trip in the Volcan area. The weather at Albrook, along the route to Rio Hato and at Rio Hato was excellent.

I made a good landing at Rio Hato at 1:45; taxied up close to the building housing the men and radio station and immediately discharged the supplies for Rio Hato and two of the passengers. At 1:55 I taxied out and took off for David, Republic de Panama, setting my course on 270 degrees. At that time the weather was still excellent at Rio Hato but I could see a rain squall about twenty miles away and a little to the right of my course, which was due west. Also, I could see large cumulus clouds on my course, though many miles ahead. I had passed Aguadulce and was to the hills of the northern part of the Mala Peninsula before I reached the first cloud. The base of the clouds was about 4000 feet with numerous rain and darkened areas to the south, west and north. Flying just south of some of the larger cumulus clouds, I encountered up-drafts of air which enabled me to climb at a thousand feet a minute with the ship in a horizontal plane. At 10,500 feet I levelled out and continued still on a westerly course. The large cumulus clouds were separate and distinct from one another, although fairly close together. Ground could be seen plainly between them, and under the clouds it appeared for the most part to be good weather with the exception of the small rain areas aforementioned. I reported my position to GA (the ground station at Albrook) and to RH-7 (the ground station at Rio Hato) when I passed Calobre and Cañazas. From Cañazas on to just before the position of the accident, there seemed to be no more rain under the clouds. Some of these cumulus clouds appeared to attain an altitude of about 20,000 feet, although the tops of the majority of them were below 10,000. Nearly all seemed to have their base at about 4,000 feet. On my climb to 10,000 feet, I had not flown through any clouds but after I had levelled off, I flew over some, beside some and through some. At 2:45 I could see the Chiriqui Gulf from 30 degrees to 90 degrees to my left and as I had seen Montijo Bay off my left wing at about 2:25, I started to descend, knowing that I must be about forty miles from David. I throttled back a little and set the controls so that we were losing 200 feet a minute at 130 miles an hour, air speed.

At this time I was flying in a large area free from any clouds whatsoever. Directly ahead of me, however, was a very large cumulous cloud whose top seemed to be about 20,000 feet. To the right of it, or due north, were other cumulus clouds close up to, though not touching, the larger one, whose tops appeared to be about 12,000 feet. The top of 'El Volcan Chiriqui' could be seen clearly at intervals in between the tops of these, though many miles further.

Just to the south and extending north to the large cumulous cloud was a darkened area of low visibility in which it appeared to be raining, although there was no cloud formation as such. The top of this area shaded off in color until at about 12 or 14 thousand feet it was clear and unlimited with no other layer; and only the high feathers of the alto cirrus marring the clear blue. The darkened area immediately in front of me, however, ran only from the large cumulous cloud to the coast, making it about fifteen miles wide, the coast line being clear.

At just a slightly lower altitude than that of the airplane and just a few degrees to the left appeared a strata of clear air, separating the darkened area into upper and lower portions, and extending from about the middle of the curtain, north nearly to the large cumulous cloud. A little further to my left, about 15 or 20 degrees, and quite some distance away, through the curtain toward which I flew, I could see intermittent lightning and a very dark area. This appeared to me to be quite distant and over the Charco Azul Bay which is twenty miles southwest of David, my destination. Through the darkened area, I could see lighter spots, causing me to believe that the area was not very thick but merely a sheet of rain. Several courses to David were open to me. They were as follows:

1. Continue the present course of 270 degrees and fly through the large cumulous cloud.
2. Climb about 2000 feet and turn north a sufficient number of degrees to enable me to fly around the large cumulous cloud and over its smaller neighbors.
3. Turn south to the coast and around the dark area.
4. Lose some altitude almost straight ahead, and go through the light strata between the two darker portions.

I elected the fourth alternative and started to descend, changing the course just a little to the left in order to enter this strata of clear air with part of the darkened area above me and part below me. When I had just about approached the curtain, I found that the clear area was still a little bit below me. Instead of diving the ship and entering this area horizontally, I continued on my same angle of descent thinking to intercept the cleared area within a very few seconds. As I entered this curtain, I encountered heavy rain, the drops being very large. I had flown in the rain for only about a minute or two, when I decided to turn around. Therefore, on instruments, although not flying blind (for there appeared to be about two miles visibility), I started a medium bank to the left and had completed about 90 degrees of the turn when I saw, just to my right, a large clear area in which there seemed to be no rain. I, therefore, turned 90 degrees to my right to bring me into this area. Just as I had finished my 90 degrees of right turn (which brought me back to my original course of 270 degrees), I broke into this clear area which seemed to be a circular area 8 or 10 miles in diameter with a dark ceiling just above me. I found that I had entered the area from a tangent so that I was just inside its circumference and that most of it was ahead and to the right. In this area there was no rain and objects on the ground could be distinguished clearly.

I had just looked at the ground and was looking at the instruments, some of which read as follows:

Sperry horizon, 45 degrees.
Altimeter, 9500 feet.
Rate of decline, 200 feet a minute.
Air speed, 140 miles an hour.
Manifold pressure, 27" Hg.
Temperature, plus 2 degrees C.

The motor was running perfectly. It had spluttered a few times after starting to descend but had picked up immediately upon a partial closing of the altitude adjustment.

Wishing to shallow the bank, I turned the wheel to the left and with a straightened leg, pushed the left rudder. Just as I was in the act of doing this, there was a violent shuddering, seeming to come from the tail. Even as I jerked back on the throttle there was a terrific explosive noise. The left rudder pedal thrust back at me violently, knocking me over in the right-rear corner of the cockpit. The controls had gone loose with a snap. The shuddering had lasted only about one-half a second, or about as long as it took me to close the throttle when my hand was already on it.

Immediately after the report, my seat and cabin were rolling in a clockwise direction. As I came up from the bottom of the roll, I pulled myself back into the seat, opened my safety belt which had been around my knees, with my left hand grabbed the D-ring of the pilot's emergency trap door. With this as a hand-hold, I attempted to turn to the right to look back into the cabin. Something was at my back and shoulders which prevented me from doing so. At that instant I was thrown out, presumably by the blowing off of the emergency trap door. At the instant of going out, I could distinctly hear the motor ticking over nicely.

Events at this point are a blur until I found myself floating on my back with the fuselage of the ship a short distance above me, but not seeming to fall as rapidly as I. The axis of the fuselage was still horizontal and was still rolling in a clock-wise direction. There were no wings, or fabric on the fuselage members except for a dark blur at the tail. There appeared to be no vertical fin or elevators, either. Wreckage was all over the sky, bits of it falling at the same rate of speed as I, pieces falling faster, and some falling slower. I delayed opening my parachute because it appeared that the skeleton fuselage was falling directly at me. After what appeared to be quite a long time, but actually was only a second or so, I did yank my ripcord. After a horrible jerk, I glanced at my watch, saw that it read 2:55, was startled by the now total lack of noise, and began to count the other parachutes in the sky. Three were grouped close together much higher than I was; one was close to me and just a little lower. The sixth I could not find, but was informed a little later, when on the ground, that it had been just above me and hidden by the silk of my chute. I watched what was left of the fuselage, a mere skeleton, flash by me and strike at the edge of a small clearing in the jungle.

As I was close to the trees then, though on the other side of a steep hill from which the fuselage had hit, I jackknifed my body, covered my face and head with my forearms and hands and crashed through the upper branches of a tree, felt the 'chute caught by these same branches and grabbed a limb close to the trunk with my first swing. Shortly after my parachute had opened, I observed that I was drifting in a northerly direction toward the higher mountains. Then followed a strata or air current which caused the parachute to oscillate violently. Below this strata the air was smooth again, but drifting me in the opposite direction, southerly and toward the now distant Pacific.

Since just before the accident, the weather was good. There was no rain. The horizontal visibility at the altitude at which my chute opened was about 20 miles. I could see mountains on one side and the coast line on the other. I had been on the ground for about two hours before any rain fell on the locality in which I landed.

From examination of the skeleton fuselage on the ground after it had hit, it was found that the landing gear, the sesqui-plane struts, the left stabilizer and the motor were still attached to the fuselage members, but all the fabric, with the exception of a little at the tail, had been torn from the fuselage before impact with the ground. There were no signs of any large pieces of the wings on the ground, nor had the wings been seen in the air by any of the men while descending in parachutes. Many pieces of yellow fabric were seen both in the air and on the ground, but no wing section, as such. One of the men reported seeing one of the gas tanks falling free. This is corroborated by the fact that though one gas tank is in the wreckage of the fuselage on the ground, the other tank is quite some distance from that wreckage.

The men in the cabin, although having their parachutes on and buckled, did not have their seat safety belts buckled. Three of the men were thrown out of the fuselage and remember nothing between the time of the shuddering and when they were falling free. The other two men found themselves half in and half out of the side of the fuselage tangled in wire cable. They report there being no fabric on the fuselage at that time. The three men who were thrown out were the ones who were grouped together and much higher than myself and the other two men when all chutes were open. Those three men landed not far from where the fuselage had struck the earth, though we three landed at a considerable distance from it."

In commenting on the weather conditions which led to this accident, the Weather Section of the Training and Operations Division, Office of the Chief of the Air Corps, states that the two physical phenomena, either of which conceivably might have caused this accident, namely a static discharge or a violent gust, are now the subject of conjecture and research among the foremost scientists connected with these problems as to the ramifications of the nature and forces developed.

The Weather Section offers the following as a possible cause. As a result of recent study it now appears that the loads introduced by gusts on aircraft are, under maximum observed conditions, considerably greater than heretofore assumed. Maximum gustiness is known to occur in regions of thunderstorms. From various considerations it is known that vertical currents of the order of 250 miles per hour exist in the most violent of these storms. Velocities of this order will be found only in the cumulus clouds associated. It is believed, however, that high velocity gusts will be found in the region close to such clouds, their maximum intensity being only a matter of conjecture to date. The airplane involved had wooden spars in the main wings, which possibly had deteriorated considerably from their original strength, as a result of being for some time in the tropics. It is quite conceivable that a sufficiently violent gust was encountered to tear the wings off. The resulting openings in the fuselage would then act as air scoops and tear off the fabric in the same manner as a thin paper bag may be blown up to the bursting point.

While it would appear that this would result in only a few major tears, it is believed that the flapping fabric would shortly be completely stripped. The clockwise rolling of the fuselage could have been due to the unequal remnants of the wings on the two sides remaining or to a partial failure and collapse of the tail section.

As to the cause of this accident, the Air Corps Materiel Division, Wright Field, is of the belief that had the airplane encountered a gust of sufficient intensity to cause failure to the structure the power plant, together with part of its mount, would be the first part of the structure to leave the airplane.

Estimating that the gross weight of the airplane at the time of the accident was 7800 pounds (the design gross weight being 9592 pounds), it is stated that with the gross weight of 7800 pounds the ultimate load factor would be increased from 5.5 to 6.5, except for the power plant supporting structure or other structural members supporting concentrated loads whose weights do not change in flight. In this accident there was no such structural failure reported; therefore it is believed that no gust of sufficient intensity to cause failure to the airplane was encountered. Calculations show that the airplane would fail if it encountered a positive sharp edge gust of 62.5 feet per second, or a negative sharp edge gust of 51.9 feet per second. Gusts of such magnitude have never been recorded.

The Materiel Division further goes on to say that the loose control described in the report indicates a structural failure in the rear portion of the airplane, while the blowing off of the fabric indicates the sudden expansion of air inside the structure, which may have been caused by lightning. The violent shuddering of the airplane indicates flutter in the tail surfaces or wing, or both, which could be caused by a gust or looseness in the structure or control system, due to excessive wear. The possible structural failure in the rear portion of the fuselage indicated by the action of the rudder controls may have been caused by a previous hard landing, or there may have been fatigue failure in the structural members.

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CHIEF OF THE AIR CORPS VISITS HAWAII

On Thursday, October 7th, Hawaii was honored by the arrival of Major General Oscar Westover, Chief of the Air Corps. General and Mrs. Westover arrived on the U.S.A.T. ST. MIHIEL, and were greeted by a flight of B-12's of the 5th Composite Group early on the morning of their arrival about fifty miles from Oahu. On Friday, General Westover visited Luke Field for an inspection of the Hawaiian Air Depot and the tactical units. The inspecting party arrived by air from Bellows Field and took off soon after in the C-33 to witness bombing by all units of the Group. Formation bombing against water targets was conducted. One target was located off Oahu and the other off Molokai. Both targets were made available to the Group by Naval units stationed at Pearl Harbor. After the inspection, General Westover and his party, which included Brigadier General Barton K. Yount and Colonel Robert C. Candee, of the 18th Wing, were guests at a luncheon at the Luke Field Officers' Club.

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"IRON LUNG" TRANSPORTED IN ARMY PLANE

An errand of mercy was performed by Master Sergeant Carlton P. Smith, pilot of the 3rd Transport Squadron at the San Antonio Air Depot, who on October 16th flew a Transport plane to Wichita Falls, Texas, and picked up an "iron lung," which had been purchased by Wichita Falls residents, and carried it to Tulsa, Oklahoma, from which place an infantile paralysis patient, Dorothy Ruth Chastain, 16, in a critical condition, was to be returned to Wichita Falls. She was placed in the "iron lung" and flown back to Wichita Falls by Sergeant Smith, who returned to the San Antonio Air Depot on October 19th, having been delayed on the trip by bad weather and engine trouble. The patient's father, Mr. J.H. Chastain, had requested the War Department for the loan of this Transport, and the journey was performed under War Department instructions through Eighth Corps Area Headquarters.

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CHANGE IN DESIGNATION OF ACTC CLASSES

A change in the designation of classes at the Air Corps Training Center was ordered by Brigadier General James E. Chaney, Commandant, on September 29th. From now on, classes will be designated according to the year and time of year that they finish the course. Thus, Class 38-A is the class which will graduate in February of 1938. This class is at present undergoing training at the Advanced Flying School at Kelly Field, Texas. This change will greatly facilitate the identification of classes, as well as permit them to retain the same designation, whether at the Primary or Advanced Flying Schools.

Due to changes in methods of instruction and in types of equipment, the hour of training, both on the ground and in the air, have been changed for Class 38-. The reduction of flying hours consists generally of a reduction in formation an training in fundamentals, including time and distance problems; in bi-motor transition and accuracy; and, in the case of the Observation Section, a reduction in transition and accuracy. In Ground School training the lectures on Bombardment, Pursuit and Attack Aviation have been reduced one hour each. All Bombardment Aviation subjects have been dropped, since Bombardment Aviation is no longer taught at the Training Center. The cour in Combat Orders has been reduced two hours.

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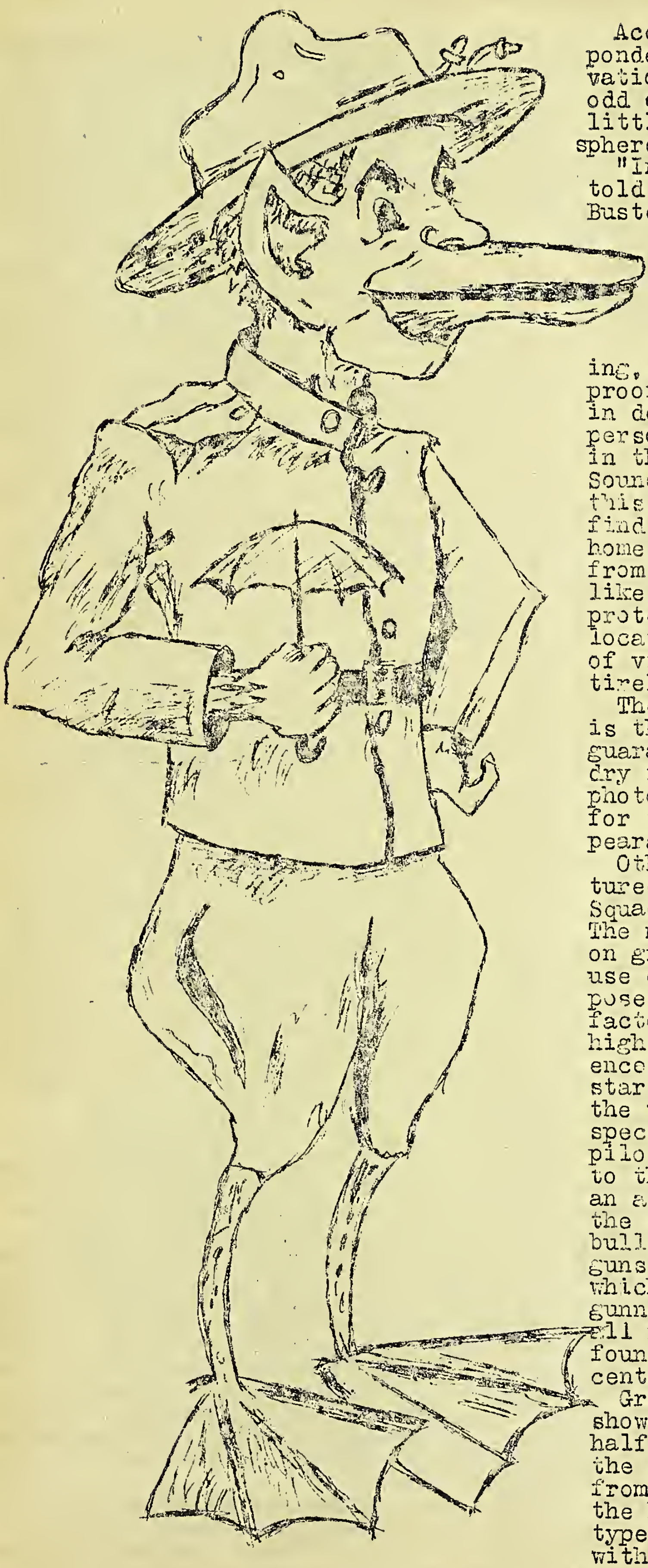
VISITORS AT ADVANCED FLYING SCHOOL

The Air Corps Advanced Flying School, Kelly Field, Texas, received a visit on October 13th from the Royal Italian Consul of New Orleans, the Marchese Dian Gerolamo Chiavari. He was accompanied by a party of fifteen, including Mr. Henry A. Guerra, of the San Antonio Chamber of Commerce. The Consul and his party were particularly interested in the various types of airplanes in use at Kelly Field and in the new miniature range building.

The party was accompanied on a tour of inspection of the field by the Commandant of the Advanced Flying School, Colonel Arnold N. Krogstad, and the Assistant Commandant, Colonel E. A. Lohman.



THE FOG BUSTERS OF THE NORTHWEST

According to the News Letter Correspondent, the members of the 91st Observation Squadron are undergoing a very odd evolutionary transition in this little known part of the western hemisphere, and he then goes on to say:

"In previous News Letter reports we told you that we were known as the 'Fog Busters of the Northwest,' not realizing at the time that a strange physical change was taking place in our anatomical makeup. This is much like an Alice-in-Wonderland story which many of you from the outer world won't believe without seeing, so we are submitting a pictorial proof. The picture on the left shows in detail the changed appearance of our personnel that survived the first year in this saturated fog-belt of the Puget Sound Area. Needless to say, we welcome this adaptation to this climate. We find our web feet ideal for paddling home through the soup when returning from cross-country trips. Our eave-like ears shed water perfectly, thus protecting our hearing when trying to locate the cone of silence, and a couple of vibratory quacks from our bills entirely eliminate all ice.

The part of our equipment we like best is the right-handed parasol, which is guaranteed to keep the 'hoisting hand' dry in any weather. Private Stepp, our photo department artist, is responsible for this composite picture of our appearance.

Other than the abnormal situation pictured above, here's news about the Squadron's activities during September. The month was devoted to aerial gunnery on ground targets, which was the first use of our O-46A equipment for this purpose. The results were far from satisfactory, and there were no exceptionally high scores made. There was a difference of opinion among the pilots at the start of the practice period as to how the wing guns should be sighted with respect to the sighting bar. Half the pilots wanted the gun sighted parallel to the bar sight, so that by aiming at an assumed spot on the lower left of the target, the shots would reach the bullseye. The other half wanted their guns sighted to coincide at 700 feet, which system was finally adopted by all gunners. Although this gave an error at all ranges other than 700 feet, it was found more natural to aim at the target center than at an imaginary point.

Ground tests of the guns at this range showed a dispersion of about two and one-half feet, which may be accounted for by the type of mounting used. This is far from satisfactory, and we do not expect the high scores possible with the old type synchronized guns can be equalled with our new equipment."

BIOGRAPHIES

LIEUT. COLONEL DONALD H. WILSON

Lieut. Colonel Donald H. Wilson, Air Corps, at present on duty as instructor at the Air Corps Tactical School at Maxwell Field, Ala., became interested in aviation in his boyhood days. He is a native of Hiner Hill, West Virginia, where he was born on September 25, 1892. Some years before the war, he built a large biplane glider and made hundreds of short flights therein with the assistance of a troop of Boy Scouts in his charge.

After graduating from the public schools of Baltimore, Md., in 1906, Colonel Wilson attended the Baltimore Polytechnic Institute for three years. For six years thereafter he was engaged in securing data and making maps of all kinds used in railroad work, including surveying, both preliminary and location. In February, 1916, he enlisted in the 5th Maryland National Guard Infantry, serving in that organization as Corporal, Sergeant and Supply Sergeant until April 9, 1917, when he was commissioned a second lieutenant. He was promoted to a first lieutenancy in the National Guard on May 2, 1917. During the year 1917,he took a special course in aeronautics at the Massachusetts Institute of Technology, Cambridge, Mass., for candidates for commissions in the Army and Navy Aerial Reserve, which course was under the tutelage of Prof. Alexander Klemin.

When the 5th Maryland Infantry was mustered into the Federal service for duty along the Mexican border, Colonel Wilson served for eight months at Eagle Pass, Texas, and during the World War, when this regiment was again Federalized, he served for one year at Camp McClellan, Anniston, Ala. He sailed for overseas duty in June, 1918, and for several months was stationed in the Vosges-Switzerland Sector. From September 27 to October 15, 1918, he attended the school for flying officers at St.Maxient, France, and from October 17 to November 2, 1918, he was a student in the Field Artillery School at Camp DeSouge,France. He was then transferred to the 2nd Aviation Instruction Center at Tours,France, where he was on duty as a student aerial observer until December 13, 1918. Thereafter, until May 15, 1919, he was on duty in the same capacity at the Second Corps Aeronautical School at Chatillion Sur Seine, France. In addition, he was attached to the 20th Company, 4th Motor Mechanics Regiment, Air Service, for duty as Post Adjutant, from February 12, 1919. Transferred to Kettig, Germany, May 21, 1919, he was assigned to the 186th Aero Squadron for duty as aerial observer.

Colonel Wilson was honorably discharged from the military service, August 15, 1919. Over a year later, on September 18, 1920, he was commissioned a first lieutenant, Air Service, Regular Army, with rank from July 1, 1920. He was promoted to Captain with the same date of rank. His first assignment under his regular commission was duty as Acting Air Officer of the 3rd Corps Area until October 20, 1920, when he was transferred to Post Field, Fort Sill, Okla., where he took a refresher course in aerial observation at the Field Artillery School of Fire. He also served as instructor in the garrison school at that post and as instructor in Infantry Liaison at the Air Corps Observation School. Completing the course of instruction at the Field Artillery School on April 9, 1921, he remained at Fort Sill as instructor at the Air Service Observation School, in addition to performing various other duties, until January 13, 1922, when he was transferred to Carlstrom Field, Arcadia, Fla., for duty as student at the Air Service Primary Flying School. In June, 1922, following the completion of the primary flying course, he was transferred to Kelly Field, Texas, for advanced flying training, graduating and receiving the ratings of Airplane Pilot and Airplane Observer as of January 23, 1923.

Retained at Kelly Field for duty, Colonel Wilson was assigned to the 10th School Group and, in addition to duty as Senior Instructor, Department of Observation, at the Advanced Flying School, he performed various other functions, including those of commanding officer of the 42nd School Squadron. In the latter part of July, 1924, when he was transferred to the Office of the Chief of Air Service, Washington, D.C., he was assigned to the Reserve Section of the Training and War Plans Division.

Three years later, in August, 1927, Colonel Wilson was detailed to foreign service, and during the major portion of his two years of duty at Camp Nichols, Rizal, P.I., he commanded Flight B of the 2nd Observation Squadron. Transferred to Langley Field, Va.,he was assigned to duty as instructor at the Air Corps Tactical School. He was a student at this School during the school year 1930-1931, and upon his graduation in June, he resumed duty as instructor at the Tactical School until his assignment, in August, 1934, as a student at the Command and General Staff School at Fort Leavenworth, Kansas, to pursue a two-year course of instruction. While on duty as instructor he also served as a member of the Air Corps Board at Maxwell Field.

Upon his graduation in June, 1936, from the Command and General Staff School, Colonel Wilson was once more assigned as Instructor at Maxwell Field.

LIEUT. COLONEL WILLIAM O. BUTLER

Lieut. Colonel William O. Butler, Air Corps, now in command of France Field, Panama Canal Zone, and the 6th Composite Group, is a native of Virginia, where he was born on September 23, 1895. He graduated from the U.S. Military Academy on April 20, 1917, was commissioned a second lieutenant, and assigned to the 6th Field Artillery. He was promoted to first lieutenant on May 15, 1917. From June 12 to July 22, 1917, he served with his regiment at Fort Douglas, Arizona, and was then ordered to duty overseas.

From September 1 to October 15, 1917, Colonel Butler was stationed at Valdahon, France, undergoing training as an aerial observer. Assigned to the front in Lorraine, near Einvelle, he served as aerial observer with the 73rd Balloon Company, November 1 to 20, 1917; was on duty at the Gondrecourt Training Center to December 22, 1917; served at the front to the west of Toul as aerial observer with the 91st French Balloon Company to March 1, 1918, and from that time until June 1, 1918, he was on duty with the A.E.F., commanding Company B, 2nd Balloon Squadron. He was cited by General Pasaga, commanding the 32nd French Army Corps, for exceptionally meritorious and efficient service, and was awarded the French Croix de Guerre.

Ordered to duty in the United States, Colonel Butler's next assignment was at the Army Balloon School at Lee Hall, Va., where he qualified as an aerial observer, receiving the rating as such as of July 31, 1918. While stationed at Lee Hall, he was, for the most part, in charge of instruction at the Balloon School, and at various times served temporarily as commanding officer of the post. He was relieved from duty with the Air Service on October 4, 1919, and assigned to the 10th Field Artillery at Camp Pike, Ark.

Reassigned to the Air Service in January, 1921, Colonel Butler received training at the Airship School at Langley Field, Va., and in May, 1921, was assigned as instructor at that school. He received the rating of Balloon Observer as of May 24, 1921, and that of Airship Pilot as of August 13, 1921. In September, 1921, he was detailed on the staff of the Field Officers School (later redesignated as the Tactical School) at Langley Field, as instructor, and he served in this capacity until July, 1922, when he was placed in command of the 19th Airship Company at Langley Field.

During May and June, 1925, Colonel Butler served as Operations Officer for the American balloon team competing in the International Balloon Race at Brussels, Belgium, for the Gordon-Bennett Trophy.

From September 12 to December 17, 1925, Colonel Butler was on duty at Brooks Field, Texas, and from the latter date until February 8, 1926, he was stationed at Kelly Field, Texas, where he pursued a special course in Airplane Observation at the Advanced Flying School, following the completion of which course he received the rating of Airplane Observer.

Reporting for duty at Scott Field, Belleville, Ill., in May, 1926, Colonel Butler served as Commanding Officer of the 12th Airship Company, in addition to performing various other duties, until May, 1929, when he was assigned to duty in the Philippines, with station at Camp Nichols, Rizal. Most of his service in the Philippines was with the 4th Composite Group, and he performed such duty as Post Exchange Officer, Commanding Officer of the 66th Service Squadron and as Executive Officer of Camp Nichols and the 4th Composite Group. In June, 1931, he returned to the United States and was assigned as student at the Air Corps Tactical School at Maxwell Field, Ala., graduating therefrom on June 12, 1932.

From June 29, 1932, to August 20, 1933, Colonel Butler was on duty at Langley Field as Instructor in the Extension Course of the Air Corps School, 80th Division. For the period of a month he was on duty with the Civilian Conservation Corps.

After pursuing a two-year course of instruction at the Command and General Staff School at Fort Leavenworth, Kans., August 25, 1933, to June 22, 1935, Colonel Butler was assigned as student at the Primary Flying School, Randolph Field, Texas, to undergo heavier-than-air training. He successfully completed his flying training both at Randolph Field and at the Advanced Flying School at Kelly Field, Texas, and received his fourth flying rating, that of "Airplane Pilot," as of October 7, 1936. He was then assigned to his present duty in the Panama Canal Department.

Colonel Butler received his promotion to Captain, August 25, 1919; to Major, August 1, 1932, and to Lieut. Colonel (temp.), August 26, 1936. He is on the General Staff Corps eligible list.

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THE NEWS LETTER COVER

The very attractive cover adorning this issue of the Air Corps News Letter is the artistic effort of Sergeant Frank J. Lorenz of the Headquarters and Headquarters Squadron, GHQ Air Force, Langley Field, Va.

Sergeant Lorenz is to be commended for the initiative displayed, the excellence both of concept and execution of the design, and for his praiseworthy interest in giving both time and effort to the task. We thank the Sergeant, and hope that sometime in the near future he will find time to create another cover design.

And while on the subject of News Letter cover designs, readers who are handy with the pen are cordially invited to send in appropriate designs for future use.

ASSIGNMENTS TO WESTERN PROCUREMENT DISTRICT

The following-named Air Corps officers have been relieved from their present assignment and duty, as indicated below, and assigned to duty at the Western Procurement District, with station in Inglewood, Calif., viz:

Major Leland C. Hurd, Air Corps Representative at plant of the Northrop Corporation at Inglewood, Calif.

Major Kenneth B. Wolfe, Air Corps Representative at plant of Northrop Corporation at Inglewood, Calif.

Major Ray G. Harris, Air Corps Representative at plant of Douglas Aircraft Co., Santa Monica, Calif.

Captain John S. Griffith, Air Corps Representative at plant of Northrop Corporation at Inglewood, Calif.

First Lieut. Daniel B. White, Air Corps Representative, Western Inspection District, Materiel Division. Santa Monica, Calif.

Major Hurd is assigned as District Representative, Western Procurement District, and the four remaining officers as Assistant District Representatives.

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WAR DEPARTMENT ORDERS

Changes of Station

To Washington, D.C.: Lieut. Colonel Lester T. Miller, from Duncan Field, Texas, to duty as a member of the War Department General Staff, effective March 19, 1938; Major John S. Gullet, from duty as Assistant Representative at the plant of the Seversky Aircraft Corporation, Farmingdale, L.I., New York, to duty in the Office of the Assistant Secretary of War.

To Denver, Colorado: 1st Lieut. Melie J. Coutlee and 2nd Lieut. Charles H. Leitner, Jr., from Barksdale Field, La.; 1st Lieuts. Jarred V. Crabb, Selfridge Field; John C. Kilborn, Randolph Field; 2nd Lieuts. Thomas F. Langben, Mitchel Field, and Henry B. Fisher, Selfridge Field, for duty as students in the Armament Course at the Denver Branch of the Air Corps Technical School.

To Randolph Field, Texas: 2nd Lieut. Ralph C. Rockwood, from Hawaiian Department; 1st Lieuts. Sam W. Cheyney and Thomas S. Power from the Philippines; 1st Lieuts. William C. Sahms and Robert W. Warren, from Hawaiian Department; 1st Lieuts. Joseph F. Carroll, Wm. J. Clinch, Jr., James P. Newberry and Roy T. Wright, from Brooks Field, Texas.

To Brooks Field, Texas: 2nd Lieut. John K. Arnold, Jr. Previous orders amended.

To Chanute Field, Ill.: Captain Joel G. O'Neal, from Randolph Field.

To Selfridge Field, Mich.: 1st Lieut. Roland O.S. Akre, from Mitchel Field.

To San Antonio Air Depot, Duncan Field, Tex. Lieut. Colonel Lester T. Miller, from Kelly Field, Texas. (Now under orders for General Staff duty next March).

Promotions

Colonel Frank M. Kennedy (temp.) to Colonel; Lieut. Colonel Junius H. Houghton (temp.) to Lieut. Colonel; Major William V. Andrews (temp.) to Major, with rank from November 1, 1937.

EXTENDED ACTIVE DUTY FOR AIR RESERVE OFFICERS

2nd Lieut. Karl Edward Baumeister, Walla Walla, Wash., to Barksdale Field, La., to October 19, 1940.

2nd Lieut. John Henry Williamson, Ninety Six, S.C., to Barksdale Field, La., to Nov. 14, 1940.

2nd Lieut. Frederick Scott, Jr., Iola, Kans., to Barksdale Field, La., to Nov. 7, 1940.

2nd Lieut. William Lewis, Jr., Glendale, Calif. to Hamilton Field, Calif., to May 14, 1938.

2nd Lieut. Robert Leslie Grove, Dallas, Tex., to Barksdale Field, La., to November 21, 1940.

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AN ADDITIONAL SUPPLY OF NAVIGATORS

The 18th Wing Navigation School at Luke Field, T.H., under the guidance of Lieut. R.C. Lindsay, was concluded on October 8th by the presentation of certificates of proficiency by the Wing Commander, Brigadier General Barton K. Yount, to ten Air Corps officers who completed the course and are now rated as dead reckoning and celestia navigators. Of these ten officers, Lieuts. Ruestow, Thatcher, Chapman, Mitchell, Cannon, DuFrane and Olson are from Luke Field, and Davis Knowles and Denison from Wheeler Field.

The News Letter Correspondent states that "th quality of the work done by the students is believed to be excellent and resulted in the following averages for the entire class for the three months' course: mean difference between estimated and actual time of arrival,- 1.51 minutes per hour flown; mean error in course,- .93 degrees; average error in 'line of position 11.84 miles based on a total of 137 observation average error in celestial 'fix' based on 29 observations,- 16.34 miles."

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Master Sergeant Nico G. Loupos, Air Corps, Ft. Riley, Kansas, was appointed a Warrant Officer, Nov. 1, 1937, and assigned to the Air Corps at Fort Riley. He originally entered the service in January, 1914; transferred to the Air Corps in June, 1919, and was appointed a Master Sergeant, October 11, 1920. He is an expert Cinematographer and Photographer, and is especially qualified as an aerial photographer.

Warrant Officer Thornton Charles Fitzsimon, stationed at Maxwell Field, Ala., is to be retired as of October 31, 1937, on account of physical disability. His original enlistment in the military service was on February 9, 1914. From October, 1917, to November, 1920, he served as an officer in the Corps of Engineers. He was appointed a Warrant Officer and assigned to the Air Corps, June 14, 1935. He served as Commanding Officer of Burgess Field, Pa., from October 23, 1935, until June, 1936, when this field was abandoned.

On October 1st, the 21st Reconnaissance Squadron, Langley Field, Va., was relieved from attachment to the Second Bombardment Group and was attached to the Second Wing of the General Headquarters Air Force.

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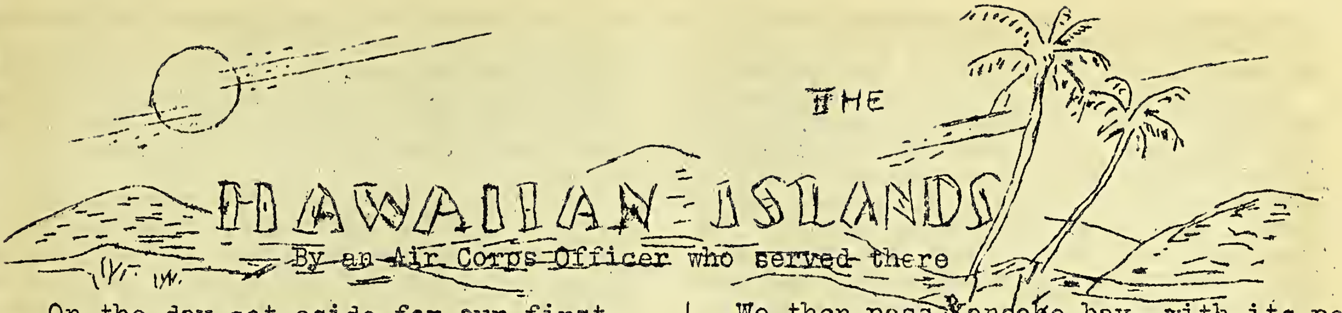

THE HAWAIIAN ISLANDS

By an Air Corps Officer who served there

On the day set aside for our first trip "Around the Island" (Oahu), there is a great deal more preparation than for a drive of similar length in "the States." A picnic lunch is assembled and bathing suits and towels form important adjuncts of the expedition.

After repeating the drive from Honolulu up the slope of Nuuanu Valley to the Pali, stopping, of course, at that point and again revelling in the outlook under different conditions of lighting from those existing on our previous visit, the descent on the windward side is again made, but the left fork of the road is taken at the bottom.

Along the sides of the road wild guava bushes grow in profusion. The fruit is the color and size of a lemon but roughly spherical in shape. We cannot resist gathering guavas and lose a lot of time on this phase of the trip.

The first beach which can be reached by side roads is Lanakai. This connects with Waimanalo beach to the south, and the latter beach extends to Makapu Head, which we rounded on our previous drive. This time, however, we are heading in the opposite direction.

It would not be right to miss a swim or at least a dip in the crystal clear water of Lanakai beach, but it must not take too long or our trip will be spoiled.

Upon leaving the beach and starting back to the main road we notice that we are passing through a lovely grove and our appetite having made itself suddenly apparent, we cannot resist stopping for at least a snack of our lunch.

After leaving the grove we see a cocoanut palm plantation which, someone in our party tells us, was planted by a corporation now defunct. Although the nuts grow and ripen, they lack the flavor of the ones grown in other climes. Naturally, we must each dislodge at least one cocoanut - not an easy task - and then find the nut covered with a very thick, tough covering of pod which, in all probability, none of us heretofore associated with cocoanuts. Having no Boy Scout axe with us, we find ourselves constrained to give up the attempt to open the nuts and end by stowing away as many as we have room for in the car.

By this time we find that we will have to hurry or complete our trip some other day. Being determined not to fail in our original plans, we now make up our mind to do some serious driving.

We then pass Kaneohe bay, with its peculiar circular coral islands, usually completely submerged except at the lowest of low tides, view stately Ulupau Head across the bay, but keep resolutely on our way.

On our left, we are told, is a long, hard walk through Lantana growth to "Sacred Falls," one of the only two small waterfalls on Oahu, and very difficult of access. The only good view of this 2,000 foot waterfall is from the air, so we continue on our way.

We drive only 10 or 15 miles before it is decided, by unanimous consent, to sit on the shore, only a short distance from the road, and finish the remains of our picnic lunch.

After lolling on the sand for a time, if, indeed, it is not so late that we must drive like mad to get back for our evening at Waikiki, we proceed on our journey. The main point of interest before rounding Kahuku Point and leaving the windward side of Oahu is the Mormon Temple and its perfectly maintained grounds at the village of Laie. This temple is very sacred to Mormons, and we are informed that funds for its support are contributed by people of this faith throughout the Pacific, even including the distant continent of Australia.

We then hurry around the numerous bays of the western coastline until we reach Haleiwa. This constitutes what is undoubtedly the best swimming and bathing beach on the island and we resolve to make another trip to this point, driving directly from Honolulu, some 35 miles away, instead of the way we have just come, spending a longer time bathing and viewing the marine gardens from one of the many small, glass bottomed boats available.

The rest of our trip takes us over the 700-foot-high plateau on which the pineapple plantations of Oahu extend in all directions, through Schofield Barracks, where the full-strength Hawaiian Divisio of Infantry, Artillery and Engineers is stationed, past Wheeler Field, Pearl Harbor, Kapiolani Park and so to Honolulu.

We notice that, upon leaving the plateau, cane fields abound instead of pineapples.

Although rather tired by our short trip of only 100 miles, we hurry to carry out our plans for the evening.

Waikiki! What anticipation we feel for an evening at that legendary spot!

We plan to start our evening with dinner at the Royal Hawaiian Hotel and, consequently, dinner clothes are in order.

As we enter the grounds of the hotel, we are forced to gasp for, even at night, the absolute perfection of the landscaping and gardening is apparent. Both the grounds and the hotel itself are elaborate. Not a weed is to be seen on the smoothly kept lawns, and the huge palm trees abound in a manner which outdoes nature. The building itself is the largest specimen of semi-Spanish structure we have ever beheld, and everything connected with it is modern to the nth degree.

We sit at a perfectly appointed table and eat the best foods with a feeling of complete relaxation. Soft strains of music and perfect, unostentatious service deter us from rushing the ceremony of our meal.

After dinner we repair to the court and are entertained by the native music and dances or by visiting entertainers from some other portion of the Pacific. Here, we learn that the hula is truly a dance of grace and is significant of the climate, the sea and the environment of the native people for ages, instead of the rather disgusting series of contortions we had previously considered it to be - from the jazz imitation usually seen in "the States."

After a little of this we saunter to the beach. On the first sight, the narrowness of the strip of coral sand is disappointing, but this feeling soon departs as the moon rises over the nearby palms and old Diamond Head. The glint of its beams on the constantly moving rollers and the surf soon start us dreaming, and the romantic nature of the setting, coupled with the sheer beauty, soon dispel any but the most pleasant thoughts and memories.

It is not long before we give an involuntary start and realize that not all our dreams are figurative. Nothing further being needed to round out a day of contentment and pleasure in living, we are well ready to retire.

Other evenings are spent in different ways. The next time we desire a modern American meal it is likely we will go to the Waialae clubhouse around Diamond Head, where we will not have the music or entertainment of the Royal Hawaiian but will view the moonlit waters of a different beach, fully as romantic as Waikiki, and look across the water to the dim outline of Molokai, some thirty miles away.

Of course, our stay in the territory would not be complete without other types of meals. The next evening takes us to one of the restaurants of Lau Yee Chai, the peer of the very best providers of Chinese food. Our ideas of noodle soup and chop suey are soon shattered upon being served a real mandarin dinner. Some of the dishes may not please us the first time we try them, but the perfection of their preparation is obvious. Long afterwards, memories of pickled shortribs, true chow mein and the many other delicacies met there for the first time will remain.

Several Japanese establishments are operated for the serving of their native dishes in proper surroundings and style. The first time we enter Ishii gardens or Ikesu's we feel very foolish at having to remove our shoes and coats - goodness, is there a hole in my socks! - and donning in their place light sandals and kimonos. Before our meal is ended our backs are tired from sitting on the scrupulously clean, matting-covered floor beside a table with legs about six inches long. We are delighted to have our "suki yaki" prepared on the table over charcoal burners by small Japanese women, the odors arising during the preparation making our mouths water. The sturdy members of our party probably essay to break the raw egg always furnished each diner over the plate of savory suki-yaki - but it does not seem just right. There are many other Japanese foods served, but suki yaki pleases the Occidental palate. The unusual surroundings and the fidgetyness, caused by the discomfort of our position, breaks down our usual reserve, and we find that each suki yaki party usually ends rather boisterously and the almost inevitable game of egg tossing terminates in minor disaster.

In addition to dinner parties, there are good moving picture houses in Honolulu, but the performances are some six months behind the same showing in the States.

Bridge is particularly delightful when indulged in on a lanai (porch) well screened from mosquitoes - because, dear reader, the rumor to the effect that there are no flies or mosquitoes in Hawaii is sadly false - with the gentle trade wind lending perfect comfort, and a view of moonlit sea available to the "dummy."

The sportsman finds three golf courses, many tennis courts, polo fields, school and army athletics of all kinds, and superlative fishing. Except at night, "still" fishing is not good. Trolling or deep water fishing are demanded, and many varieties of game fish abound, including barracuda, ono, oio, jack (three varieties - ulua, momi, and kama), dolphin, mahi-mahi, kava-kava, ava-ava, tuna, bonita (aku), and marlin swordfish. If the fisherman is willing to content himself with smaller fish, he can have ample sport with an outboard motor and a 15-to-17-foot flat-bottom boat. These may be rented at certain points. Deep sea fishing for the larger fish is rather expensive.

In the proper seasons excellent hunting may be obtained. In addition to various types of game birds - quail(on Molokai), banded doves, Chinese pheasants - Japanese deer roam the hills of Molokai, domestic sheep gone wild are to be found in Hawaii, and many wild pigs hide in the wooded slopes of nearly every island. Although the pigs are descendants of domesticated stock, they lack none of the attributes in size and fierceness of their perennially wild cousins. In fact, boar hunting is claimed as Hawaii's most dangerous sport.

Nanikuli, the most unusual bathing beach, is on the leeward or or "kona" coast of Oahu. The slope of the coral sand is so steep that once every half hour or so the undertow will hold the incoming wave stationary until a 10 or 12-foot wall of water is built up. Any bather caught in this wave, when it finally rushes in, is bound to be rolled over and over. The experience, including getting the very adherent sand out of eyes, ears, nose and mouth, causes considerable merriment, but occasionally some bather becomes too venturesome and goes too far out where a peculiarly dangerous sucking undertow is said to exist. At any rate one or two bathers drown there annually.

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HIGH DEGREE OF NAVIGATION SKILL

The preciseness with which the modern airplanes of the Army Air Corps is now being operated was demonstrated recently on a return flight to Langley Field, Va., of four B-17 Bombardment planes which were flown to Fort Riley, Kansas, for the purpose of staging a bombing exhibition for students of the Command and General Staff School and the Cavalry School. Lieut. Colonel Robert Olds, Commanding the 2nd Bombardment Group, led the flight. The three other B-17's were commanded by Majors Caleb V. Haynes, Harold L. George and Captain Neil B. Harding.

The mission was routine and, as in other such missions, valuable lessons were learned which should prove of benefit in future cooperative missions with other units.

There was nothing routine about the return flight, however. It turned out to be a very fine example of the degree of accuracy that can be obtained by good navigation and a thorough knowledge of your equipment.

Beginning at 8:00 a.m, (CST), the four B-17's cleared for Langley Field (three from Fort Riley and one from Fort Leavenworth), at five-minute intervals, with instructions to proceed to 11,000 feet at 200 miles per hour true airspeed and at a predetermined fuel flow for an assembly over Yorktown, Va., a distance of over 1100 miles from the point of takeoff. At scheduled intervals, positions of each airplane were broadcast in code in latitude and longitude and plotted in the Group Commander's lead plane. At 1:30 p.m., all planes were contacted on the command frequency and directed to change the assembly point from Yorktown to Petersburg, Va., at 5,000 feet, at 2:45 p.m.

The assembly was accomplished on course and on schedule with a reduction of only three inches manifold pressure by the leading airplane and without changing course a single degree. All airplanes were landed at Langley Field at 3:20 p.m.

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AERIAL REVIEW FOR CHIEF OF THE AIR CORPS

Six Douglas B-18 Bombardment planes from Hamilton Field, Calif., passed in aerial review before Major General Oscar Westover, Chief of the Air Corps, at 7:00 o'clock on the morning of October 18th while he was on board the Army Transport "San Mihiel" in San Francisco Bay. General Westover arrived that morning from a vacation and an inspection of Air Corps activities in Hawaii.

In his honor the six Bombardment airplanes flew over the fog and, locating a break, passed over the "San Mihiel" several times at an altitude of about 500 feet. The formation was commanded by Major James G. Taylor, and was accompanied by Lieut. Colonel George E. Stratemeyer, Commanding Officer of the 7th Bombardment Group of Hamilton Field.

Officers participating in the flight, in addition to Colonel Stratemeyer and Major Taylor, were Lieuts. Chester P. Gilger, Jo K. Warner, Oliver S. Picher, A.V.P. Anderson, Willis G. Carter, James H. Wallace, Samuel V. Payne, J.J.Morrow, D.H. Walker, Troy W. Crawford, John A. Way, Harvey T. Alness and Paul C. Ashworth.

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SKEET SHOOTING POPULAR IN HAWAII

The new Skeet Range for the personnel of Luke Field, T.H., is enjoying its full share of popularity these days. Among those using the range when the 23rd Bombardment Squadron was in charge were pilots attached to the Squadron, and they ran away with all honors. Colonel M.F. Harmon, Major Laughinghouse and Lieut. Bisson were the outstanding shots in the Group. After repeated close calls, Lieut. Bisson managed to be the first to break 25 out of 25 shots. "In all fairness though," adds the News Letter Correspondent, "it must be stated that he had to take leave in order to devote all of his time to the task in hand before he was able to accomplish this feat."

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During September, the Engineering Department of the San Antonio Air Depot overhauled 18 airplanes and 35 engines and repaired 53 airplanes and 11 engines.

SCHOOL BELLS RING AT LANGLEY "TECH."

About June 20, 1937, the Langley Field Air Base was directed to set in operation a school for the enlisted men, for the purpose of teaching the basic subjects - Shop Mathematics, Mechanical Drawing and Blueprint Reading, Elements of Electricity, Elements of Metal Work, and radio code, to prepare the men taking the course for the Chanute Field entrance examination.

Many problems presented themselves in the establishment of the school, such as the selection of a teaching staff, finding suitable quarters for the school, securing equipment, and so forth; but the obstacles were sufficiently overcome so that on July 1st the Air Base Technical School opened its doors with a class of 15 men, an increment of 15 additional men being added every 15 days, and two months being allotted each class for the completion of the course. Thus, there is a continuous student body of sixty men.

The educational qualifications of the teaching staff and office force averages one year or more of college training and the instructors have proved very efficient. Since the inauguration of the school four months ago, twenty-five men have been sent to Chanute Field, and reports of their splendid progress indicate that the training they received in the basic courses at Langley Field has been most helpful.

The problem of quarters has been the most perplexing one of all. First, the Kindergarten school building was used, but when the time came for the regular Kindergarten to begin it was necessary to vacate same. The school was then moved to the old Helium Plant. This plant was not very well adapted for school purposes. Therefore, when the C.C.C. camp, which is located on the outskirts of the post, was vacated, the school moved in.

Conditions for study and instruction and plenty of building space provides an ideal set-up for the operation of the school. Of course, all has not been a bed of roses, but due to the excellent cooperation of the Squadron Commanders, post officers, teachers and students, "Langley Tech," as some wise-cracking student called it, has moved forward.

"Our motto," says the News Letter Correspondent, "is Determination and Efficiency, and these attributes are constantly brought to the attention of the students and teachers. Langley Tech bids fair to become a great asset to the post."

Permanent school personnel are as follows:

1st Lieut. Harold W. Bowman, Officer in Charge.

Corporal Joseph A. Stenglein, Noncommissioned Officer in Charge.

Privates, Specialist 6th Class, Charles W. Echols, Warren A. Stouffer, Shirley O. Batten and Dondal G. Smith, Senior Instructor, Instructor in Electricity, Instructor in Shop Mathematics and Instructor in Mechanical Drawing, respectively.

Privates, 1st Class, AM 2nd Class, Raymond D. Carter and Joseph Taglianeeti, instructors in Shop Metal and Welding and Radio Code, respectively.

Private, 1st Class, Jessie P. Daniels, Assistant Instructor in Shop Metal and Welding.

Privates Robert W. Carlstein and Robert B. Hamilton, Caretakers.

The faculty and students of Langley Tech are very fond of pets. "Pete," a Boston Bull Pup, owned by Sergeant Oldson, is official mascot. However, he had to engage in several combats with cats in order to maintain his prestige and position. "Pete" will be missed when he goes to Chanute.

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VISIT OF NOTABLE POLISH PHYSICIAN

A distinguished Polish physician, Lieut. Colonel Anthony Fiumel, Medical Corps, Polish Army, Director of the Polish Military Aero Medical Institute and Chief of the Military Aero Medical Service, honored Randolph Field and the School of Aviation Medicine with a visit on October 8th and 9th.

He came to this country - his first visit - to attend the Aero Medical Association meeting in New York and to visit the School of Aviation Medicine at Randolph Field, Texas. Flying from the east to San Antonio, he was met by a member of the faculty of the School of Aviation Medicine. After making an official call on Brigadier General James E. Chaney, Air Corps, the Commanding General of the Air Corps Training Center, he was conducted to the school.

Colonel Fiumel proved to be a most interesting visitor. He observed in great detail the work being done at the School of Aviation Medicine and was given a demonstration in each department by its Director. He was shown through the Station Hospital by the Surgeon, and the Link Trainer was demonstrated to him by an Air Corps officer. A luncheon was tendered him at the Officers' Mess, which General Chaney attended, and this was followed by a tour of Randolph Field.

Just before his departure, Colonel Fiumel honored the Faculty and the present Flight Surgeons' Class with a short address in English. One of his many accomplishments is his ability to speak five languages, and the address in English was all the more remarkable, since he had but ten lessons in this language prior to sailing for America.

"Colonel Fiumel is one of the most stimulating characters it has ever been our pleasure to meet," declares the News

Letter Correspondent. "He is amicable, unassuming, holds one's attention in an easy manner and possesses a keen sense of humor. One of his observations to the press is as follows: 'I find the United States a nation of business men who work hard and obtain fine results. Your people do not talk much but their hard work reveals their fine character.'

The mutual exchange of ideas with representatives of foreign countries is a valuable aid to the progress of aviation medicine. We hope Colonel Fiumel returns soon."

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B.S. DEGREES FOR WEST POINT GRADUATES

A letter sent recently to all Army activities by the War Department invites attention to the provisions of Public 189, 75th Congress, approved July 8, 1937, authorizing the Superintendent of the United States Military Academy to send certificates conferring the Degree of Bachelor of Science on all living graduates of the United States Military Academy who are still in the service, active and retired, without application therefor.

The Superintendent of the Military Academy is desirous of advising all those graduates who are no longer in the service to apply for their certificates to him, giving the exact mailing address to which the certificate is to be sent. He also makes the request that Army officers communicate the above information to any Military Academy graduate not now in the service whose address is known.

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SCHOOL OPPORTUNITIES FOR RESERVE OFFICERS

Beginning with the Fiscal Year 1939, the War Department proposes to send a limited number of Air Reserve officers residing within the continental limits of the United States for an eight weeks' course at the Air Corps Tactical School at Maxwell Field, Ala. The exact number of students (depending on available appropriations) and period during which instruction will be conducted will be announced later.

Air Reserve officers selected to take this course of instruction shall be Captains, not more than 40 years of age, who have completed the subcourses requisite for promotion to the grade of major. Preference will be given those who have been on extended active duty with the Air Corps and who are otherwise qualified for taking the course.

Since this course of instruction has not been available to Air Reserve officers, the War Department desires that Corps Area Commanders cause every effort to be made to qualify as many as possible so that there will be an adequate number of eligibles from which to make selections.

THE SPECIAL TECHNICAL SCHOOL EDITION

Very favorable comments have been received from all sides on the excellence of the Special Technical School Edition of the Air Corps News Letter of November 10, 1937.

All of the work connected with the preparation and printing of this special edition was done at Chanute Field, Ill., and hearty congratulations are extended to all those who had a hand in this most worthwhile effort.

To put it briefly, this special edition tells all about the Air Corps Technical School at Chanute Field, and it does so not only through the printed word but, what is still more desirable, through the medium of a series of most interesting photographs - real action pictures which the editors of pictorial magazines love so well.

There is a slogan in the advertising field to the effect that "Pictures Make Sales." If such is the case, then this special edition of the News Letter should be the cause of the Air Corps Technical School easily selling itself to any reader of the News Letter, particularly one interested in entering a field of endeavor in one or more of the mechanical phases allied to aviation.

This Special Technical School edition is a souvenir well worth having, and the sincere thanks and appreciation of the Information Division, Office of the Chief of the Air Corps, is extended to the Commandant of the Technical School, the Assistant Commandant, and all others who contributed toward its production. It is felt that the sentiments of the Information Division in this matter are shared by the entire Air Corps.

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88TH SQUADRON RELINQUISHES ITS O-35's

The 88th Reconnaissance Squadron at Hamilton Field, Calif., is losing its three O-35 Douglas Observation airplanes. These bi-motored, high wing, gull type monoplanes are the oldest tactical type in the GHQ Air Force. They were manufactured in 1932, came to tactical service in 1933, and have been in continued service ever since. They are going to the Advanced Flying School, Kelly Field, where they will be used for advanced training in bi-motored aircraft.

"The continued operation of these airplanes," declared the News Letter Correspondent, "reflects credit upon the officers and enlisted personnel of the Squadron, in that the careful operation on the part of the pilots and the excellent quality of workmanship on the part of the ground crews has been the principal factor in the prolonged life of these airplanes and, in view of the fact that they are flown on an average of four and five hours per day, this is an excellent record.

AMERICA SPREADS HER WINGS

A booklet recently published by the Works Progress Administration, artistically illustrated by diagrams, charts and photographs (many of the latter furnished by the Air Corps) tells a graphic story of the airport and other work accomplished in the past few years through the Federal Works Program.

The charts in this booklet are prepared in a manner such as to give at a glance statistics covering the development of air transportation, aircraft construction, airport construction, various aids introduced to promote safety in flying, etc. From these charts the following facts are gleaned:

Airline passengers, who numbered 150,000 in the year 1929, grew to almost 500,000 in 1932, and to almost 1,050,000 in 1936.

Airline route mileage increased from 8,252 in 1926 to 24,864 in 1929; 28,550 in 1932, and to 28,814 in 1936.

The growth of air express and air mail was truly remarkable. From 300,000 pounds of air express in 1929, the figures mounted to one million pounds in 1932 and to seven million pounds in 1936. From approximately 250,000 pounds of air mail transported in 1926, the figures grew to 7,000,000 pounds in 1929, 9 million pounds in 1931, and approximately 16,500,000 pounds in 1936.

Aircraft passenger miles multiplied from 84,014,572 in 1930 to 127,038,798 in 1932 and to 435,502,283 in 1936.

The number of airports grew from 1,000 in 1927 to 1,500 in 1930, to 2,000 in 1933 and to 2,500 in 1936.

The number of miles of lighted airways jumped from 4,000 in 1927 to almost four times that number in 1930; to almost 20,000 miles in 1933, and to 22,000 miles in 1936.

Radio range stations increased from 30 in 1930 to almost 100 in 1935 and to 150 in 1936.

The 3,000 miles of teletype weather service in 1929 grew to about 11,500 miles in 1934 and to 13,000 miles in 1936.

The number of commercial aircraft in the United States increased considerably between the years 1927 and 1934. With less than 1,500 aircraft in 1927, the statistics for 1934 show 8,000 in 1934 and 9,000 in 1936.

In 1927 there were not quite 2,000 licensed pilots in commercial aviation in this country. This number grew to 14,000 in 1933 and to 16,000 in 1936. The number of students undergoing flying instruction increased from less than 1,000 in 1927 to 13,000 in 1929 and to 32,000 in 1936.

In connection with the advances made in the speed of aircraft, the charts show that in 1926, the average length of runways was 1,500 feet, as compared with 2,500 feet in 1933 and 5,000 feet in 1936. Aircraft speed increased from a cruising speed of about 100 miles per hour and a top speed of less than 125 miles per hour, to a cruising speed of about 150 miles per hour and a top speed of over 200 miles per hour in 1936. The first set of figures were those for 1927.

In 1936, commercial air liners carried 21 passengers, as against 14 in 1934, 10 in 1933 and 4 in airplanes of 1926 vintage.

The weight of airplanes increased from 4,000 pounds in 1927 to 17,000 pounds in 1930, to 18,000 pounds in 1934, and 32,000 pounds in 1936.

Oil consumption in aircraft operation increased from 300,000 gallons in 1929 to about 750,000 in 1932 and to 900,000 gallons in 1936. Gasoline consumption rose from 6,000,000 gallons in 1927 to 24,000,000 gallons in 1932. and to about 33,000,000 gallons in 1936.

Of each WPA dollar expended to December 1, 1936, 32.2¢ went for materials and equipment and 67.8¢ for labor. Sponsors have contributed 9.7¢ of each dollar expended on aviation projects, and of this contribution, 83.8¢ went for materials and the remaining 16.2¢ for labor.

The photographs interspersed throughout this booklet show how various air markers are placed on buildings and grounds; also some of the super air terminals in this country, major airports, airports at lakes and recreation parks, examples of work done to improve American airports; various hangars and terminal buildings; lighting beacons, and groups of students attending ground school classes in practical aeronautics - one of the air education projects of WPA.

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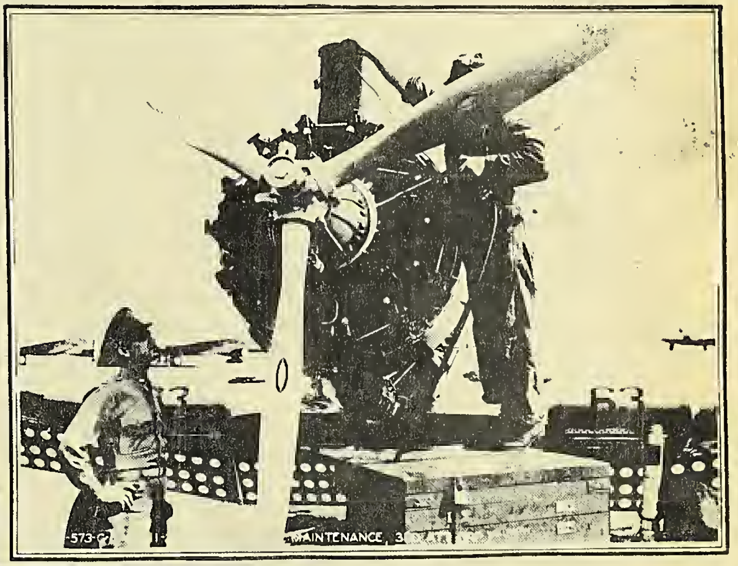
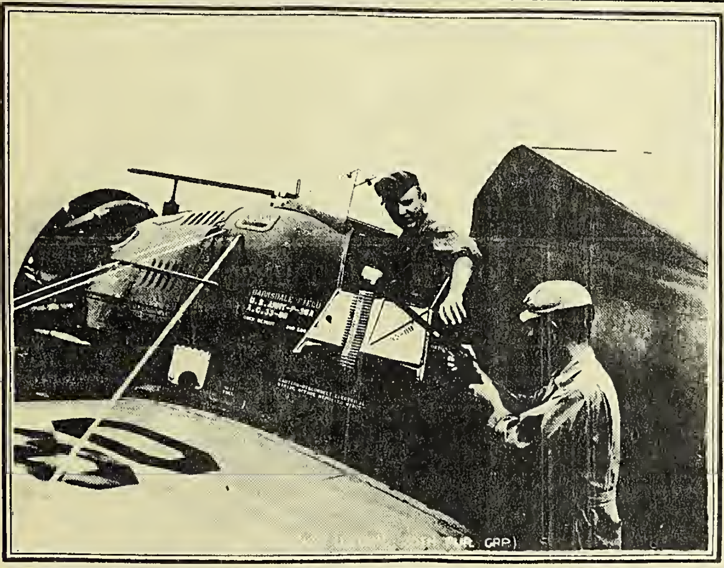
Major Caleb V. Haynes and Lieut. Curtis E. LeMay, of the 49th Bombardment Squadron, Langley Field, Va., and Mr. MacAvoy, of the National Advisory Committee for Aeronautics, after attending an informal engineering conference at Wright Field, Dayton, Ohio, returned to Langley Field in B-17 No. 80 in the remarkable time of one hour and 45 minutes.

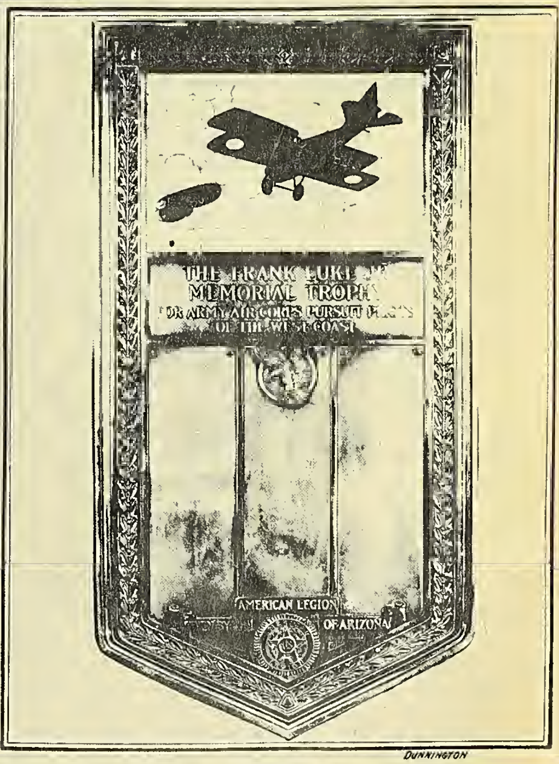
Bolling Field recently received delivery of ten BT-9B's from the North American factory at Inglewood, Calif. These two-place airplanes are capable of more than 150 miles per hour.

The Northwest-Southeast runway at Bolling Field is being made about 200 feet longer.

air corps
NEWS LETTER







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VOL. XX AIR CORPS NEWS LETTER NO. 23.
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The chief purpose of this publication is to distribute information on aeronautics to the flying personnel in the Regular Army, Reserve Corps, National Guard, and others connected with aviation.

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PRESENTATION OF THE COLOMBIAN AND LUKE MEMORIAL TROPHIES

By Private Harvey N. Finger

IN a very impressive ceremony, before the assembled 3rd Attack and 20th Pursuit Groups and some fifteen thousand spectators, Major General Frank M. Andrews, Commanding General of the GHQ Air Force, presented the Colombian and Luke Memorial Trophies to the 3rd Attack Group and the 77th Pursuit Squadron, respectively.

The presentation took place at Barksdale Field, La., on Sunday afternoon, November 21, 1937, and was without doubt the most outstanding event since the dedication of the field. The event had been given wide publicity and was anticipated for weeks by the citizens of the Ark-La-Tex area.

In presenting the Colombian Trophy, General Andrews said:

"The Third Attack Group is the winner of the Colombian Trophy for the second consecutive year. Let me remind you that this beautiful trophy, handwrought in pure silver, was presented to the GHQ Air Force by a representative of the Air Force of the Republic of Colombia in order to cement more firmly the spirit of friendship between the two American Republics, and to express the feeling of comradeship which exists among fliers of all nations.

"Each year this trophy is awarded to the group of the GHQ Air Force which has the lowest accident rate per thousand flying hours for the preceding training year. During the past year, the Third Attack Group had but four minor accidents out of a total flying time of over 23,000 hours. Only one injury was sustained, and that was minor in nature. This excellent record was approached by only one other group - the 8th Pursuit - which had a total of six minor accidents. I regret to state that all other groups had at least one fatal accident.

"However, it is very gratifying to note that the accident rate in 1937 for the entire GHQ Air Force was just about one-third less than it was for 1936. This indicates that accidents can be reduced if sensible policies are intelligently and energetically carried out by tactical units. And so, every one of us can rightly share a feeling of pride over a task well done.

"I feel that no small measure of credit is due to the Colombian Trophy, which serves not only as an added incentive to officers and men of the combat units, but which helps to make all of us conscious of the extreme care which must be exercised in every phase of supervision, maintenance, and operation of aircraft. Supervisory personnel, the pilots themselves, and every enlisted man who performs some task having to do with the operation and maintenance of the airplane and its equipment - all have a joint responsibility in the matter of accident prevention.

"I think it is well to point out that each succeeding year, with the closer airdrome control of modern operations, sees the growing responsibility of supervisory personnel. Therefore, the award of this trophy to the Third Attack Group indicates not only a high order of efficiency of its former commander, Lieut. Colonel Earl L. Naiden, and of every officer and enlisted man in that Group, but also reflects credit on the Third Wing and the Sixth Air Base."

Colonel Era A. Rader, present commander of the Third Attack Group, stepped forward and received the trophy from General Andrews.

In presenting the Frank Luke Memorial Trophy, General Andrews said:

"The Luke Trophy, a memorial to Lieut. Frank Luke, Jr., one of the most famous of all our American Pursuit pilots in the World War, is awarded annually to the Pursuit squadron making the highest average gunnery score in record practice during the training year.

"The Frank Luke, Jr. Memorial Trophy was originally presented by the Arizona Department of the American Legion in 1932. I regret that a representative of that patriotic body is unable to be here to make this presentation. The Department Adjutant, Mr. E.P. McDowell, desires me to extend his congratulations to the winner this year and to express to you the hope that this Trophy will provide an incentive for the continual betterment of the service.

"The 77th Pursuit Squadron, by the very excellent record of 58 percent possible hits for its entire record practice during the past year, is the winner of the Luke Trophy. I desire to extend my congratulations and appreciation to the Commanding Officer, Major Clark; the former Commanding Officer, Major Carlton F. Bond, and the individual officers who made this excellent showing. You have a record for the past year of which you may be justly proud."

Both the speech by General Andrews and the introductory speech by General Frederick L. Martin, Commanding the Third Wing, GHQ Air Force, were broadcast to the assembled multitude through a public address system installed for the occasion. Following the presentation ceremonies, the airplanes of the Third Wing passed in review for General Andrews.

The rest of the afternoon was given over to Barksdale Field's fourth annual tactical demonstration. The various units and individuals who participated in the program performed superbly, and there was naught but praise for them from the spectators.

The curtain raiser for the demonstration was a formation of eighteen Pursuit airplanes conducting mass firing at ground targets. These planes were led by Major Carlton F. Bond, and were immediately followed by Lieuts. Park R. Learned and Cecil P. Lessig, who thrilled the crowd with their excellent exhibition of "dog-fighting."

Lieuts. Wilbur D. Camp, James Ferguson and Loring F. Stetson were next in line, and after they started with a bursting bomb, they proceeded to put their tiny Pursuit ships through the paces. While the "Pea Shooters" were doing the flying during the early part of the program, the Attack Group was busily loading their airplanes with bombs and machine gun ammunition, and after taking the air the following events came in rapid succession:

Dropping of parachute bombs by the 8th Attack Squadron from A-18 airplanes; bombing attack on ground targets by the 90th, using 100-pound bombs, and dropping of fragmentation bombs by the 13th Attack Squadron. After their bombing attacks, the three squadrons of the Attack Group rendezvoused and conducted a mass machine gun attack on targets which had been erected on the east edge of the flying field.

Again it was the Pursuit Group's time to take the air, and they were represented in the next event by Lieuts. Troy Keith and Lamont Saxton, who bursted balloons and cut streamers with deadly accuracy. Parachute jumps were next in order, and the huge crowd was indeed thrilled as four enlisted men of the 6th Air Base Squadron floated earthward beneath their billowy canopies of white silk.

The comparison between new and obsolescent equipment was demonstrated when three B-5A Bombers, flying in formation, were rapidly overtaken and passed by a B-17 Bomber.

The program was completed by three airplanes from the 90th Attack Squadron laying a smoke screen the length of the flying field.

The precision with which the program was conducted, the excellent advance publicity that had been given both the presentation ceremonies and tactical demonstrations, the expeditious manner in which traffic was handled and the general success of the entire day was due to the personal supervision of both General Martin and Colonel Goolrick. The special staff they appointed to take care of the detailed arrangements was as follows:

Colonel Ira A. Rader, Commanding Officer of the tactical demonstration.

Lieut. Colonel William C. Ocker, in charge of traffic and general handling of the crowd.

Major Frank L. Cook, in charge of all ground arrangements.

Lieut. Arthur F. Merewether, in charge of publicity.

Lieut. Kermit D. Stevens, announcer for the public address system.

The Colombian Trophy has an interesting history. In 1935, during the concentration of the GHQ Air Force at Miami, Florida, for tactical exercises, Major Benjamin Mendez, a member of the Air Force of the Colombian Republic, presented the Trophy to General Andrews. It was subsequently accepted by the United States Government through diplomatic channels.

The Third Attack Group became the first custodian of the Trophy by virtue of having had only two accidents in a flying time of 9,193 hours, a rate of .218 per thousand hours. This was for the year 1936.

Prime reason for the existence of Pursuit airplanes in the GHQ Air Force is to attack enemy airplanes with machine guns in case of war. To encourage the men who fire these machine guns to their best efforts, the Arizona Department of the American Legion, on December 17, 1932, donated to the War Department a bronze plaque in memory of Lieut. Frank Luke, World War hero and a native of Phoenix, Arizona, whose valorous deeds in the World War won for him the posthumous award of the Congressional Medal of Honor. He was one of the outstanding American flyers in the great conflict, bringing down eighteen enemy aircraft before he too perished in sky combat. He was known in the Aviation Section, Signal Corps, as the "Balloon Buster" of the A.E.F., because of his deadly accuracy in downing the observation "sausages" of the Germans.

Originally the Trophy was to be awarded to the West Coast Pursuit pilot having the highest score in his annual gunnery record firing, but in the year 1936, in view of the fact that no Pursuit organizations were stationed on the West Coast, the conditions of the award were changed so that the presentation would be made to the organization having the highest aggregate score, said organization to be a Pursuit Squadron of the GHQ Air Force.

The first award of the Frank Luke Trophy in 1933 was made to 2nd Lieut. W.C. Morse, of the 95th Pursuit Squadron, March Field, Calif., who in record firing attained 1014 points out of a possible score of 1750, a percentage of accuracy of 57.9.

The Trophy was not awarded in 1934, due to uncompleted gunnery season.

Second Lieut. Frederic C. Gray, Jr., Air Reserve, received the 1935 award for the best aerial Pursuit gunnery performance of the year, his record being 1176 points out of a possible score of 1750, his percentage of accuracy being 60.7.

The 79th Pursuit Squadron, GHQ Air Force, received the 1936 award for the highest aggregate score in aerial gunnery, the average score being 59.5%.

Additional details supplied by the News Letter Correspondent of the 20th Pursuit Group, relative to the activities at Barksdale Field on November 21st, are given below, as follows:

The thousands of spectators were first thrilled with an aerial review by the entire Third Wing. Following the review, the 20th Pursuit Group "peeled off" and gave a demonstration of mass gunnery on ground targets that was excellent. Three flights of six planes each were used, the flights being made up of three 2-ship elements.

As the Group circled for landing, two P-26A's came screaming out of the stratosphere to give a demonstration of an aerial "dog fight." They left no stones unturned. The crowd was still "oh-ing" and "ah-ing" when three more "pea shooters" came hurtling down to the hangar line and pulled up into a bursting bomb. Their antics kept all the visitors on their toes for the next ten minutes. The trio ended their part of the show by flying down the hangar line on their sides.

Following the Pursuit Show, the Attack Group took off and put on a wonderful exhibition of bombing and shooting at ground targets. One of the highlights of the show was the dropping of dummy parachute bombs by the 8th Attack Squadron which is now equipped with the new Curtiss A-18 Attack planes.

Although the temperature hovered around thirty degrees all afternoon, a tremendous crowd from all the Ark-La-Tex area witnessed this aerial spectacle. The proceeds of the nominal admission charge were given to local charitable institutions.

ATTACKERS COOPERATE WITH GROUND TROOPS

Nineteen Attack airplanes from the 3rd Wing, GHQ Air Force, Barksdale Field, La., arrived at Kelly Field, Texas, on November 7th, under the command of Major P.L. Williams, and took off the next day for Camp Bullis, where the airmen carried out a training mission in connection with the test division in the field at that locality. The flight returned to Barksdale Field upon the completion of the mission.

On the afternoon of November 8th, another flight of 19 Attack planes, under the command of Major A.C. Strickland, arrived from Barksdale Field to carry out a similar mission. The Army flyers took off the following morning for Camp Bullis to swoop to the attack of columns on the march, the mission being to attack with whitewash "gas" as well as simulated machine gun strafing. Their mission completed, the flight returned to Barksdale Field on November 10th.

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EXPERIMENTAL INSTRUMENT FLIGHT

The 37th Attack Squadron, Langley Field, Va., on November 5th, conducted a more or less experimental instrument flight, when the pilots of three airplanes flying under the hood at two, four and six thousand feet altitude, respectively, were directed to Middletown, Pa., by radio control from a fourth airplane which performed the navigating and directing. The experiment proved very successful. During the first five minutes of the flight, however, while the pilots were getting orientated on their courses, the directing pilot found himself as busy as a telephone operator in the New York Stock Exchange in his endeavor to keep the instrument pilots within reasonable distances of each other. After the first twenty minutes, there were no more than ten orders given over the radio for one hour to keep the airplanes all intact on into Middletown.

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Roaring eastward from California in the closing days of October, five B-18's finally arrived at Mitchel Field, N.Y., for assignment to the 18th Reconnaissance Squadron. These, with the Sikorsky S-43, soon to arrive from Bridgeport, will provide the Squadron with equipment adequate to perform the duties of search and patrol for B-10 or B-18 Bombardment units to which it may be attached. The ferry teams were Major Melville, newly joined Squadron Commander, and Lieut. Hollstein; Captain White and Lieut. Dilley; Capts. Doyle and J.N. Jones, from the 18th; and from the 9th Bombardment Group, Major Connell and Lieut. Baylor in one ship, and Captain Russ Scott and Lieut. Hutchinson in the other.

VARIED PROGRAM FOR TACTICAL SCHOOL STUDENTS

Students of the 1937-1938 Class at the Air Corps Tactical School, Maxwell Field, Ala., had considerable variety introduced into their program during the month of October. While not all of the variety was enjoyed, it served to break the monotony of steady classes and study, and the class is well set for the hard pull to the Christmas holidays.

The annual visits to the Valparaiso Bombing and Gunnery Base were marred by very unseasonable weather. The first section of the class flew down on October 14th for two days of machine gun firing, and a chilly north wind followed closely on the tail of the formations. Due to the shortness of the stay, the students were housed in tents at the flying field instead of being quartered in the cottages at White Point. The useasonable weather caught the Valparaiso Detachment unawares, and no stoves had been installed in the tents. However, bales of blankets were broken, and most of the students managed to keep fairly warm, although the weight under which they slept left most of them tired the following morning.

The gunnery program was run off under the direction of Captains James E.Parker and Ralph F. Stearley, and consisted of fixed and flexible gun firing at both ground and towed targets. The program was completed on Saturday afternoon, October 16th, and practically none of the students wasted any time in making a fast return to their heated quarters at Maxwell Field. The following week end was almost a duplication of the first, and "B" Section had full reason to be skeptical that there was any such thing as "Sunny Florida." The tent stoves which had been installed by this time came in for full use during the two-day stay.

The Class had two very instructive visits to Fort Benning, Ga., for demonstrations at the Infantry School. On October 19th, they were given a realistic picture of the Infantry Company in its attack, and this was followed in the afternoon by a demonstration of the various Infantry weapons. The accuracy and rapidity of fire of the howitzer and 37 mm. guns were especially impressive. The next visit on November 2nd gave the students an opportunity to see the full Infantry Battalion in a coordinated attack, and as the Infantry map problem on this same subject had been conducted the previous afternoon, it undoubtedly served better than a "school solution" to show the proper tactics which should have been employed.

The final fall visit of the Class to Fort Benning, scheduled for November 16th, was for the purpose of affording the students an opportunity of witnessing a demonstration of what may be expected in artillery fire from the Division Artillery.

During the week of November 1st, the classroom instruction in the Air Navigation Course was brought to a close with several very instructive lectures by Lieut. Thomas L. Thurlow from the Materiel Division.

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INFANTRY CLASS VISITS TACTICAL SCHOOL

The new Refresher Class at the Infantry School, Fort Benning, Ga., paid a visit to Maxwell Field, Ala., on November 5th, in order to obtain an idea as to what makes the wheels go round at the Air Corps Tactical School. The visiting party consisted of the 17 students of the Refresher Class and 23 instructors of the Infantry School, headed by Col. Charles F. Thompson, Infantry, Assistant Commandant.

All but six of the visitors made the round trip by air, Maxwell Field airplanes going over early in the morning to ferry the visitors to the Air Corps station and, following the completion of the program, student officers made the return flight.

The program for the visitors started with a general introduction party in the Office of the Commandant, Brigadier General H.C. Pratt, and then a visit through the school building, conducted by the Assistant Commandant, Colonel Herbert A. Dargue. Captain J. Gordon Pratt, Photographic Officer, followed with a twenty-minute illustrated talk on the latest developments in Photography, and the remainder of the morning was spent on the flying line inspecting the newer airplanes and the functioning of the Operations Office.

At noon the visitors were guests of General Pratt for lunch at the Officers' Club, and then were present at the Operations tower to witness the take-off of the students scheduled for flying. The Air Corps Supply, Engineering Department and Armament Section were visited and the functions thereof explained. The final item on the program was a visit to the Naval Operations Game Room. Lieut. Commander Miles R. Browning, U.S. Navy instructor at the School, showed a very comprehensive layout of various fleet formations, and in his talk thoroughly described the reasons for the various formations.

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Squadron Leader H.B. Seekamp, of the Australian Air Force, was a visitor at Wright Field, Ohio, on November 2nd. The Australian airman was enroute to England, and on his crossing of the United States was planning to visit many aircraft manufacturing plants and government bases.

THE ARMY WAR COLLEGE

By Colonel B. Q. Jones, Air Corps

THE course at the Army War College is the last opportunity for officers to "lose their corners" in the democratizing process of our military educational system. I say democratizing, for there is probably no other environment with as wholesale an atmosphere so true to the American ideas of democracy nor so insistent upon honesty and fair play as our military organization.

The junior schools in the echelons of officer training must perforce instruct by indoctrinization. It is there that the "trade of soldiering" and the "profession of command and staff" are taught. The trades and professions are fairly exact sciences. They are the codifications of the experiences, practices and procedures that have been developed to stabilized status through the ages. Quite naturally those institutions cannot allow unlicensed latitude and freedom of thought by student bodies sent there to be grounded in the very facts of history and experience.

At the Army War College is taught (more properly speaking, self-taught by the students themselves) the "art of war" and the "policies of nations." The art of war and the policies of nations are not exact sciences and are not subject to codification. There are certain immutable principles applicable to the art of war, the violation of which in the face of an able opponent leads to disaster. However, nothing short of natural ability (of which honesty and strength of character are the foundation) coupled with experience, study and reflection can master the art of war. The policies of nations spring from the lives, commerce and politics of peoples. To the average officer they are the mysterious forces that start and stop wars and dictate the manner in which they shall be conducted.

It is the objective of the Army War College to consolidate the previous training, study and experience of the student officers and project their thoughts into the higher War Department and GHQ aspects of war.

As prescribed by the War Department, the mission of the War College is:

"To train officers for the conduct of field operations of the Army and higher echelons; and to instruct in those political, economic, and social matters which influence the conduct of war."

"To instruct officers in War Department General Staff duties and those of the Office of the Assistant Secretary of War."

"To train officers for joint operations of the Army and Navy."

"To instruct officers in the strategy, tactics, and logistics of large operations in past wars, with special reference to the World War."

The course lasts for ten months, from the first of September until graduation at the end of June. It is divided into two general sections, the first dealing with the preparation for war, the second with the conduct of war. In the first section of the course operations by armies and groups of armies are studied together with the general organization and functioning of the War Department, including the duties, functions and responsibilities and methods of operating of the Chief of Staff, the G-1, G-2, G-3, G-4, and War Plans Divisions of the War Department General Staff, the Office of the Assistant Secretary of War, and the Offices of the War Department Special Staff. The second section of the instruction deals with the conduct of war, wherein students are assigned war subjects and required to prepare plans for, and actually carry on the execution of war missions through the process of group studies, map problems, map maneuvers, and terrain studies. The 88 Army and 4 Naval and 2 Marine Corps officers comprising the student body are organized into command groups for instruction in the conduct of war, and into committees for instruction in the preparation for war. The committees will range from 8 to 12 and 16 members each, wherein especially assigned subjects are researched, analyzed and "synthesized." Each course lasts approximately three weeks, with a fourth week to ten days devoted to presentations and conferences.

Not to neglect the physical well being of the students, an extra half hour is prescribed during the lunch hour in which the students are required to devote themselves to some form of athletics. The most popular sport is soft ball during clement weather. Such games as golf, tennis, handball, squash, volley-ball, badminton, ping-pong and bowling are all played.

What the student officer gets out of the War College is a measure of his own individual capacity. At the Army War College student officers really have the "giftie gie them to see themselves as others see them." By the process of critical self-analysis student officers can get the measure of their own capacities for high command and staff assignments.

The student body itself is composed of some of the ablest officers in the service. A cross section of their experience offers an imposing spread of knowledge and talent. They represent the accumulative knowledge and abilities of a body of professional military students in the prime of life, stable, honest and possessing a keen capacity for critical analysis of any subject offered for their consideration. The greatest latitude is accorded them in the prosecution of their studies. The forum procedure is followed. No better words describe the "scheme of instruction" at the War College than those used by Mr. Newton D. Baker, when Secretary of War, when he stated that the aim of the War College was "not that some more wise should teach some less wise, but rather that a group of men by contact, consultation and conference evolve the best wisdom of the entire group." In other words, the Army War College is a college in the true sense of the word. It is an open, frank interchange of experience and ideas on the common ground of professional equity for the purpose of the instruction of the whole in the art of war.

Each committee researches an especially assigned subject in each of the courses pursued. The several committee studies are presented by designated speakers in open conference before the whole War College so that all may benefit from the special studies of all committees. In this manner some eighty odd military subjects are studied and discussed during the course of the college year. If no other impression is made upon the student body than that the subjects studied during the college year constitute but a small portion of all the subjects with which the military student should become familiar, then the course at the War College will have proved worthwhile.

The War College is no exception to the mission of all centers of instruction. It can but indicate to its student bodies the nature of the problems peculiar to its specialized field of endeavor and suggest the roads to follow in the pursuit of further knowledge and indicate the doors to open for the solution of special problems.

A student coming to the Army War College should realize that he will travel in fast company and that both he and his ability will be quickly appraised and labeled by his fellow students. It will be through association with his fellow students that he will learn the most, establish his reputation and start those contacts which can go a long way towards making pleasant official relations in his future assignments. It will be in the student committee rooms that close associations will be established and intimate professional experiences and ideas exchanged. It is a good rule for students who expect to come to the War College to come with an open and tolerant frame of mind.

If Air Corps officers coming to the War College as students will appreciate the view of the average ground officer, and if they will realize that it is the self-taught process of instruction that prevails here at The War College, they will be able to render the greatest service to themselves and to their fellow students. It is the exchange of knowledge and experience among the student body at the War College, coming as they do from all branches of the Army as well as from the Navy and the Marine Corps, that comprises so much of the instruction at the War College.

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THE 2ND STAFF SQUADRON AT BOLLING FIELD

The Second Staff Squadron was organized on September 1, 1936, along with the First Staff Squadron and the Base Headquarters and 14th Air Base Squadron, with permanent station at Bolling Field, D.C. The Squadron is under the direct supervision of the Chief of the Air Corps and has no connection with the GHQ Air Force.

When organized, the Squadron was under the command of Captain D.D. FitzGerald who, upon his appointment to the grade of Major in October, 1936, was relieved from command of the Squadron and his place was taken by Captain Arthur L. Bump, Jr., who is in command of the Squadron at the present writing. The officers in the Squadron at the time of its organization included Captain H.K. Baisley, Lieuts. R.E. Koon and J.W. Persons. Captain Baisley was subsequently transferred to the 14th Air Base Squadron and Lieut. Koon to Langley Field, Va. Captain Bump and Lieut. Persons now remain with the Squadron.

When organized, the strength of the Squadron was set at 100 men, but this number has been gradually cut down until now it numbers only 70 men. The First Sergeant of the organization is John J. McStay, who has held this position since the Squadron was organized. The Line Chief is Master Sergeant Hukill, and Technical Sergeants Craft and Roberts are co-workers in charge of the hangar.

At present the airplanes assigned to this Squadron are: 1 PT-3A, 2 P-12E's, 10 O-38B's, 2 A-11's, 1 C-23, 5 BT-9B's, 1 O-46A, 3 A-17's and 1 A-17A.

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Four Air Corps officers, Captains D.B. Phillips, Randolph Field; H.P. Rush, Chanute Field; Lieuts. W.C. Dolan, Brooks Field, and D.O. Darrow, March Field, reported on November 8th for the most recent of the present series of classes being conducted at the Materiel Division, Wright Field, Ohio, for instruction in instrument landing training.

The instruction includes thorough ground training on the Air Corps Link trainer set up in the equipment laboratory, as well as actual flight training in blind instrument landings under the standard Air Corps instrument landing system.

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THE NEW AIR CORPS WEATHER SCHOOL

WITH the advent of the modern long-range aircraft of large size and high landing speeds, which characteristics tend to increase the complications of emergency landings, accurate and efficient weather service has become an absolute essential to safety.

Alive to this need, the War Department instituted the new Air Corps Weather Service, which will eventually provide each Army flying field with its own weather station. At certain of the larger flying fields, such stations will be designated as Air Corps base weather stations, with uninterrupted service throughout the 24 hours of the day.

The impracticability of the immediate procurement of an adequate number of weather forecasters for this service suggested the inauguration of a Weather School under Air Corps supervision, located at an Air Corps field, and to be known as the Air Corps Weather School. Prior to the inauguration of this School, the only source of trained weather personnel was the small Meteorological School operated by the Signal Corps, U.S. Army, at Fort Monmouth, N.J., the capacity of which was but twenty graduates a year.

The new School was established with the experienced teaching staff and equipment of the Fort Monmouth School. Patterson Field, Fairfield, Ohio, was selected as the most advantageous location for it. The excellent organization work, performed in quick order by Captain Don McNeal, Signal Corps, and his assistants, in the transfer of personnel and equipment from Fort Monmouth to the new School, the only one of its kind in the United States for the training of military men, enabled it to be opened for instruction activities on September 1st, with an enrollment of 25 students.

The whole floor of the Headquarters building at Patterson Field was turned over by Lieut. Colonel J.H. Houghton,Air Corps, Commandant of the School, for school purposes. Class rooms, study rooms, laboratories and offices are modern, well lighted, and adaptable to the aims of the School. The desks, specially designed by Captain McNeal, serve the students not only for study purposes but, by the attachment of removable brackets, as small laboratories where weather maps and charts may be mounted on swinging panels about the student, enabling him to study in historical sequence previous weather maps and auxiliary chart data as he works out a map on his desk. These brackets not only hold the maps and charts for his convenience in study, but form small walls, shutting him away from distraction as he works.

For the purpose of developing and translating into practical form this science of weather, a high type of student is required, one who is at least a high school graduate with a college entrance course to his credit. His bent must be along scientific lines. He is chosen from the enlisted personnel and must pass an entrance examination.

A visit to the School will quickly convince one that there are attractions to "weather" other than sunshine and balmy breezes. The faces of the students are eager as they work.

The morning sessions at the School are devoted to Mathematics, including algebra and some trigonometry, physics and meteorology, embracing the modern theory of air mass analysis and the structure of atmospheric formations based upon the polar front theory. The afternoons are given over to laboratory exercises in weather map making, analyzing and forecasting. A study hour following the morning period sometimes turns into a question and answer session and sometimes into a discussion or semi-lecture period revolving about some such subject as the origin and development of cyclones.

Captain McNeal, Assistant Commandant and Senior Instructor of the School, has as aids two assistant instructors and three laboratory directors.

Since each base weather station operating continuously will require for all shifts the services of four forecasters, and each auxiliary station two or three, depending upon its size and location, there will be a demand for capable graduates of the Weather School for some years to come. The course at the School extends over a period of five months, and there will be two classes each year.

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LEGISLATORS INSPECT HAWAIIAN DEFENSES

The month of October witnessed the arrival of a number of members of Congress, who visited Hawaii as members of a Committee on Statehood and of a Sub-Committee of the House Military Affairs Committee. All were interested in the defense forces of the Islands, and a number of inspections and reviews were scheduled for their benefit. On October 11th, the 5th Composite Group landed at Hickam Field and lined up on the completed portion of the mat with full combat crews. The Group was inspected by members of the Committee, accompanied by the Department Commander, Major General Andrew Moses; Brigadier General Barton K. Yount, Wing Commander, and other high ranking officers. On October 14th, the Committee was honored by a review of the Hawaiian Division and the 18th Wing. Ground elements of the 5th Composite Group were moved to Schofield Barracks by truck where, in comparison with crack units of the Division, a very creditable

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MORE FLIGHT SURGEONS FOR THE SERVICE

Eleven medical officers, who have been taking the basic course at the School of Aviation Medicine, Randolph Field, Texas, since July 15, 1937, graduated on November 13th, last, as Flight Surgeons. Five of these officers, who hold commissions in the Medical Corps, U.S. Army, are stationed at various Air Corps Fields. They are Captains John R. Copenhaver, Kelly Field; Burt Held, Barksdale Field; Paul H. Jenkins, Maxwell Field; Frank H. Lane, Langley Field, and Donald D. Flickinger, March Field.

Four of the graduates, members of the Naval establishment, are Lieuts. Thomas L. Allman, Alfred W. Eyer, Lieuts. (jg) James C. Flemming and William C. Fowler.

Captains Frederick Miller, M.C., of the Washington National Guard, Spokane, and Daniel F. Stough, Medical Corps Reserve, of Geary, Okla., joined the class on October 1st for six weeks of practical work, after having completed the correspondence course of this School, and graduated with the class as Flight Surgeons. Major Julio Cesar Aguilera, M.C., Mexican Army, received a certificate of attendance.

Diplomas were presented to the students by Brigadier General James E. Chaney, Commanding General of the Air Corps Training Center. He was accompanied by Colonel A.N. Krogstad, Commandant of the Advanced Flying School, Kelly Field, and Lieut. Colonel John B. Brooks, Commandant of the Primary Flying School, Randolph Field.

A very interesting and inspiring address was delivered to the class by the Rev. Arthur R. McKinstry, Rector of the St. Marks Episcopal Church, San Antonio. Major G.J. McMurry, Chaplain at Randolph Field, delivered the invocation and benediction, and Lieut. Colonel Coleridge L. Beaven, Medical Corps, Acting Commandant of the School of Aviation Medicine, presided.

Two basic courses, each of four months' duration, are conducted annually, starting on July 15th and December 1st of each calendar year. In addition to the resident course, as a year-round activity, the School conducts an extension (correspondence) course in Aviation Medicine, in which there are now 461 nation-wide enrollees. The permanent personnel on duty at the School now comprise seven officers, eight enlisted men and six civilian employees. The commissioned personnel, all Medical Corps officers, are:

Lieut. Colonel Coleridge L. Beaven, Acting Commandant.

Lieut. Colonel Neely C. Mashburn, Acting Assistant Commandant and Director of Department of Psychology.

Major Charles F. Snell and Captain Charles L. Leedham, Director and Assistand Director, respectively, Department of Aviation Medicine.

Major John M. Hargreaves, Director, Department of Ophthalmology and Otology.

Captain Edward J. Kendrick, Director, Department of Neuropsychiatry.

Captain Benj. R. Luscomb, Executive Officer and Secretary.

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WORLD WAR UNIT RENDERED INACTIVE

The 23rd Photo Section, stationed at March Field, Riverside, Calif., since August, 1936, was on October 15th declared inactive by a War Department order.

A World War unit, organized at Madison Barracks, New York, on July 26, 1918, the 23rd Photo Section served overseas until March, 1919. It was demobilized at Camp Devens, Mass., on May 7th, 1919, and, three years later, in June, 1922, was reorganized at Post Field, Fort Sill, Okla. The unit was transferred to March Field in June, 1927, and assigned to the 13th School Group. It was later attached to the 9th Corps Area, and in 1936 it was returned to March Field.

Under the command of Lieut. Paul Hanley, Air Corps, the 23rd Photo Section had just completed a 1,300-square mile project of mosaic photography for the U.S. Geological Survey, covering areas in Oregon, Montana and Idaho. A great deal of the work was accomplished under adverse weather conditions. Lieut. Hanley, with Sergeant Brees and Corporal Woodward, completed their mission in such a manner that they drew high praise from officials of the Geological Survey.

In rendering the organization inactive, ten of the twenty men were transferred to the 38th Reconnaissance Squadron to carry on aerial photography projects, and the remaining men were transferred to the 4th Air Base Squadron to continue laboratory work and ground photography.

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18TH WING HEADQUARTERS AT HICKAM FIELD

Under General Orders of the Headquarters Hawaiian Department, dated October 30, 1937, the transfer of the 18th Wing Headquarters, Air Corps, from Fort Shafter to Hickam Field was directed. The Headquarters 18th Wing, consisting of the Commanding General and his staff, will remain at Fort Shafter on a detached service status. This marks the formal opening of the post and increases activities toward further development of the largest airdrome in the Hawaiian Islands.

First Lieut. Robert W. Warren, Air Corps, assumed command of the post, and has two Quartermaster officers assigned.

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Legislators Inspect Hawaiian Defenses

(Continued from Page 7).

performance as "foot-soldiers" was displayed. The pass-by of the air elements of the 18th Wing concluded an impressive demonstration of the efficiency of the Army's Island forces.

INSTRUMENT LANDING SCHOOL CONDUCTED AT WRIGHT FIELD

THREE officers and six enlisted men reported at Wright Field, Dayton, Ohio, during the week of October 4th to receive instructions in the Standard Air Corps Instrument Landing System, which opened up new avenues for safety in flying when developed under the direction of Major Albert F. Hegenberger several years ago.

The system has been installed at 17 Air Corps fields, and the purpose of the present classes is to provide instruction in its use to certain pilots and enlisted men in order that they may in turn act as instructors to their own tactical organizations, thereby establishing uniform methods of flying and maintaining the system throughout the Air Corps.

The school is being operated under the direction of Major C.M. Cummings, with Captain G.V. Holloman serving as instructor for the instrument flights and landings. Only the officers, who are, of course, Air Corps pilots, will receive the instrument flight and landing instructions. The instructions to the enlisted men will cover the maintenance and operation of the equipment.

Classes for officers extend over a two-weeks' period, with three officers to a class. Those for enlisted men will extend over a month's period with six men to a class.

Although 17 Air Corps fields have been equipped for instrument landings, six are located in the Philippine Islands, Hawaii and Panama. Representatives of these fields will receive training at some later date. The eleven fields in the continental limits of the United States - Langley, Mitchel, Barksdale, Selfridge, Hamilton, Kelly, March, Chanute, Brooks, Maxwell and Randolph - will each send one officer and one enlisted man to receive the instructions.

Preliminary instructions for the officers taking the course are given in an Air Corps Instrument Flying and Landing Trainer, ground type, which has been in Air Corps use about a year and a half. This trainer consists of a fuselage equipped with wheel control, rudder, complete set of instruments and radio aids. The fuselage is so mounted that it can be rotated in azimuth by means of the rudder, and the wheel or stick controls the bank and dive or climb. An instructor's table is provided where a problem in radio range orientation can be set up on a keying oscillator and amplifier assembly in such a manner that the student can locate the cone of silence or simulate an instrument landing. A recording device records or plots the course flown by the student, thereby permitting the student and instructor to know definitely where the student was flying at all times. Under this hooded cockpit, the student receives the first four hours of his training. He is then ready to attempt the hooded cockpit in actual flight in a tactical airplane and can actually accomplish the feat of blind landing after one or two attempts.

The airplane instruments for instrument flight and landing are improved but basically the same as those used in the original Army system; namely, the radio compass, flight indicator (gyro horizon), turn indicator (directional gyro), sensitive altimeter, air-speed indicator, and marker beacon receptor.

The ground equipment consists of marker beacon projectors and radio compass guiding stations. This equipment is enclosed in trucks, and has undergone considerable improvement in the last several years, especially in connection with antennas. The newer and more effective types are those which have greatly increased the operating range of the equipment. They have been sponsored by Major General J.O. Mauborgne, recently appointed Chief Signal Officer of the Army.

In the training of pilots for instrument landings, experience has proved that the greatest step is taken when the student accomplishes the first blind landing. This involves a certain psychological adjustment in which the human senses are replaced completely with instrument senses. Once this adjustment is accomplished, however, the whole plan resolves itself into a simple and reliable operation in which he soon gains confidence. Before qualifying as having completed the course, the student must accomplish five consecutive blind landings.

A vast step to advance the present Army Landing System was accomplished when, a month ago, by linking the present instruments with the automatic pilot, an airplane was flown and landed automatically; that is, without any human operation of controls whatever. This system, it is anticipated, will when perfected form part of future instrument landing methods.

A list of officers and enlisted personnel attending the present class follows:

Officers: 1st Lieut. John H. Bundy, Kelly Field; 2nd Lieuts. James H.Houston, Barksdale Field, and Lewis L. Mundell, Hamilton Field.

Enlisted Men: Corporal Donald T. O'Connor, 12th Air Base, Kelly Field; Master Sergeant T.J. Kelly, 5th Air Base, Hamilton Field; Staff Sergeant E.A.Sell, 1st Bombardment Squadron, Mitchel Field; Sergeant E.B. Taylor, 6th Air Base, Barksdale Field; Private 1st Class William Bonto, 3rd Air Base, Selfridge Field; and Private 1st Class G.L. Gilliland, 1st Air Base, Langley Field, Virginia.

GUNNERY IN HAWAII WITH B-12's

In carrying out gunnery from B-12 type airplanes recently, the 23rd Bombardment Squadron, Luke Field, T.H., was establishing a precedent for the rest of the 5th Composite Group, as all previous aerial gunnery had been accomplished in Keystone Bombers. To perform gunnery work with the new airplane required a bit of inventive work on the part of the armament section of the Squadron. Since none of the B-12's on Luke Field were equipped with tow reels, a makeshift had to be devised. After many mistakes and lost targets, it was found that the solution was to use ordinary 5/8-inch sash cord, one end of which was fastened by means of an eye to a bomb shackle in the bomb bay, the other end to a 20-foot length of flexible wire cable. The standard tow target release was fastened to the end of the cable in the usual manner. The rope was attached in the bomb bay, strung through the bomb bay doors which were left partly open, and back into the ship through the tunnel gun opening in the rear of the ship. Here the rope was neatly coiled on the floor so that when in the air the man in the rear could let the rope of the tunnel gun door slowly and safely. The targets, which were already attached on the rope by means of rings, were then let out after the rope was entirely out, and operations could then be carried on in the normal manner.

On the last run the entire cable could be released by means of the emergency release which would drop the rope off the bomb shackle. A metal guard was placed over the edge at the rear of the bomb bay to prevent chafing of the rope at this point. The wire cable was necessary because of the abrupt curve in the rope just in front of the weighted release. Before the cable was spliced to the rope, a good many targets and releases were lost because of the new sleeve failing to negotiate the bend and parting the rope just in front of the release. After the above set-up had been made, gunnery went along with only a few unavoidable mishaps.

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AIRPLANE JACKS

A light collapsible tripod airplane jack with a rated capacity of 10,000 pounds has been released by the Materiel Division as Air Corps standard. This type of jack is suitable for use with B-10B, B-18, B-18A, C-32, C-33 and C-34 airplanes. A 5-ton hydraulic commercial jacking unit is used in conjunction with the tripod. By removing three wing nuts the tripod can be folded to an overall dimension of 10 inches by 10 inches by 60 inches. As the weight of the jack is less than 100 pounds, it may be readily transported and operated by one man. This is a considerable improvement over a number of very heavy, screw type jacking units constructed in the past.

A quantity of these jacks is in production at the San Antonio Air Depot and will soon be distributed throughout the service.

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PORTABLE PHOTOGRAPHIC LABORATORY

A Sub-Committee of the Air Corps Technical Committee, convened at the Materiel Division recently for the purpose of making inspection, evaluating design and preparing required military characteristics for a portable photographic laboratory, in order to submit data which would serve the purpose of a service test report on this equipment. Members of the committee were Majors C.Y.Banfill, Office of the Chief of the Air Corps, President; E.B. Bobzien, Logan Field, Baltimore; Donald Stitt, Chanute Field; George W. Goddard, Wright Field; Captain H.K. Baisley, Bolling Field; Lieut. J.F. Thompson, Fort Knox, Ky.; Master Sergeants Gilbert, Chanute Field; A.E.Matos and Sergeant A.E. Pollard.

The meeting of this Sub-Committee should result in materially speeding up the change of status
so that equipment can be procured from funds set up on the program for this Fiscal Year.

The portable photographic laboratory available at the Materiel Division for this study and test is the Type A-1, which was fabricated in accordance with Air Corps Specification. It is 18 feet long, and the interior is divided into two apartments, one for developing, the other for printing purposes. All of the necessary processing equipment and facilities required to process completely aerial roll film, cut film, and to produce photographic prints are completely housed within the two separate rooms provided. Water is refrigerated. A 110-volt alternating current generator makes standard plug-in possible.

The complete laboratory unit is built on a chassis which can be towed by Quartermaster vehicles. The processing equipment is specially designed to keep the weight and size down to the minimum. The arrangement of the equipment and rooms permits a regular line production of photographic prints that can completely process and dry two hundred 8 by 10 inch size prints per hour.

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The 20th Bombardment Squadron, Langley Field, Va., proved to a lot of "Doubting Thomases" that a B-17 engine could be changed (without any special preparation or warning) between 4:00 o'clock, afternoon, and 6:00 o'clock the following morning.

TRYING MOMENTS DURING A WEATHER FLIGHT

By the Kelly Field Correspondent

THE following comprises a report of Captain B.M.Hovey, Jr., pilot of the Meteorological Flight on November 1, 1937:

The weather flight at Kelly Field on the morning of November 1st was an interesting experience to the pilot, but a trying one to the personnel at Kelly Field who were connected with the flight.

Captain Hovey departed from Kelly Field at 1:10 a.m., in an O-25 airplane, equipped with the weather instruments. Although the ceiling had been unlimited, it was obvious that a fog was forming at an approximate altitude of 800 feet. However, after consulting the personnel of the Weather Section who are on duty twenty-four hours of the day, the pilot decided that he should attempt the flight.

Captain Hovey instructed the Weather Section to keep him posted on any changes and the base altitude of the fog which they were observing at five-minute intervals. At an altitude of 850 feet, the pilot was obliged to take to his instruments for about 200 feet, the top of the fog being about 1100 feet. The climb from the ground was made at 300 feet a minute. Radio contact with the ground station at Kelly Field had been established before take-off and a report of the altitude of ceiling was made. Above the fog, which was still pierced with holes through which lights on the ground could be seen, Captain Hovey decided to fly toward Corpus Christi above the light line, since the general visibility in that direction was better than in any other. Just as an altitude of 14,000 feet was reached, a ceiling of 600 feet was reported from Kelly, so the pilot started for the ground. The correct pressure altitude was set on the altimeter and the plane leveled off at 200 feet about 20 miles southeast of San Antonio. A course was then flown parallel to the light line toward Kelly.

After about three minutes on this course at this low altitude a zero ceiling was encountered, forcing the pilot to climb above the fog which was now 1,000 feet thick. The pilot had no trouble flying in over Kelly on the east leg of the Kelly Field beam. After passing through the cone of silence, a power glide was established and a continued left turn flown so that the plane would be brought out of the fog at or very near the station. When an altitude of 500 feet was reached, the radio announced that the flood and boundary lights had gone out at Kelly. This was sad news, since the pilot had been relying upon the glare from the flood lights to determine when the plane was below the fog. A rapid glance from the instruments over the cockpit revealed nothing but fog, so the pilot again climbed back up on top.

Repeated attempts were made to come down through the fog, but the bottom could not be found as low as 300 feet. A course was set for Corpus Christi again, and Captain Hovey told the Kelly radio operator, at 3:06 a.m., that he would land at Pawnee at the Department of Commerce emergency field if it was in the clear. The fog was very thin over this field, so a landing was made there without difficulty at 3:40 a.m.

Pawnee is but sixty miles from Kelly Field, but was out of range of the transmitter of the O-25, so no report could be made to the home station that a safe landing had been accomplished. Shortly after landing at Pawnee, the fog rolled in there. Ceiling and visibility remained zero at both Pawnee and San Antonio throughout the remainder of the night. The pilot took short naps in the cockpit, on the wing, and under the wing on the ground. Fifteen minutes after dawn, the pilot found a sleepy rattlesnake about fifteen feet from the left wing of the plane, so he spent the rest of his time in the cockpit.

The gasoline carried was sufficient for about five hours; therefore, by 6:00 a.m., he must have been down some place. Anxious minutes passed with no report, so an organized aerial search was planned and, shortly after the first planes departed to search south of Kelly Field toward Pawnee, a radio message was received from Captain Hovey that he was enroute to Kelly Field, where he arrived at 9:05 a.m.

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The British Air Ministry recently issued the following warning to pilots of the Royal Air Force:

1. During experimental flights undertaken for the purpose of testing de-icing equipment, it has been found that the lateral control of an aircraft may be jammed temporarily.

2. In each case this has happened whe the aircraft entered a region in which the temperature of the atmosphere was about 0 deg.C., after having flown for some time in very severe icing conditions At this temperature the ice on the leading edges of the planes and ailerons was melting and breaking away. It is thought that some of this loose ice found its wa into the gap in front of the balance portion of the aileron and restricted its movement.

3. The first indication of this condition has been a sharp snatch laterally o the control column which may move the co

(Continued on page 14).

74TH SQUADRON CONSTRUCTS GUNNERY RANGE

By 1st Lieut. Franklin K. Paul, Air Reserve

SIXTY miles southwest of Albrook Field in the lowlands of the mountainous spine that splits the Isthmus of Panama lies the Army flying field and gunnery range at Rio Hato. A permanent detail of eight men is utilized at this field to set up targets, service airplanes, and maintain the radio station that answers (usually) to the phonetic, Roger Hypo Seven.

With the advent of the A-17 airplanes, and the conversion of the 74th Pursuit-Bombardment-Attack Squadron, it became necessary to construct an elaborate and entirely different arrangement of gunnery and bombing targets. Accordingly, on the morning of October 18th, some 25 men of the 74th Squadron, armed with hammers and nails, picks, shovels and field camping equipment, clambered aboard two Federals full of two by four lumber and set out for Rio Hato and ten days of work. Trucking to Rio Hato was no mean feat in itself, as it entailed sidestepping the scores of chiva drivers who demand seven eights of the narrow gauge road and yield the remaining eighth as a grudging favor. However, men and lumber reached camp without losing a board foot.

Setting up camp and clearing the area of trees and brush began, the officers of the 74th taking charge of the camp in two-day shifts. Work was usually halted at noon and the remainder of the day devoted to swimming at nearby La Venta beach, or lying on bunks - a small amount of swimming and a great amount of lying. Rumors of sharks seen cutting the water around the point added the spice of excitement to those who sought relief from the afternoon heat in the surf. Sleeping conditions in the cool tropical nights were excellent and, although the rainy season was in full swing, the only tent that leaked appreciably was that occupied by the officer in charge. Even this discomfort was surmounted by the simple expedient of shifting the bunk to various positions, although the splashing of rain on the floor was a constant reminder that nature was very very close.

The main feature of the construction work, aside from laying out bombing circles and foul lines, consisted of erecting ten wooden targets in column, each target fifty feet long and approximately three feet high, with a space of fifty yards between targets. A survey and a line of levels for the layout were run with difficulty due to recalcitrant vertical circle and a bubble tube that refused to associate with the line of collimation; but the final error was whittled down to one sixteenth of an inch. Each fifty-foot panel was constructed in five movable sections, faced with solid board and painted white. Future air travelers, spying the white panels from above, will probably wonder idly why such an elaborate four-foot hurdle race outfit was set up so far from civilization.

Work on the targets was completed and the men returned to Albrook Field on the 27th. The 74th Squadron has tentatively arranged to encamp again at Rio Hato sometime during November to engage in a short gunnery and bombing season, using the newly constructed range. Scorekeepers, snuggled safely in dugouts close to the line of fire, will listen to the whispering rush of A-17's close overhead, will hear the smack of bullets in the wooden face boards, and will probably visualize the things that will happen to an unwary column of troops in any future conflict.

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SPECIAL NOTICE

I desire to invite the attention of Air Corps officers to the Command and General Staff School Quarterly, a military periodical, the sole aim of which is to serve as a reliable professional medium enabling officers to keep abreast of military development the world over.

Among the features of the "Quarterly" are -

Selected historical problems illustrating current tactical teachings.

A section devoted to "Military News Around the World;"

Carefully selected lectures, problems and texts illustrating or effecting the procedure or tactical doctrines of the Command and General Staff School;

Reviews of foreign and domestic military books and periodicals.

General Bundel, Commandant of the Command and General Staff School, says:

> "Every officer who desires to keep abreast of his profession should, in my opinion, be a subscriber to the Command and General Staff School Quarterly."

With this sentiment I heartily agree.

The yearly subscription cost is $1.00 for the four issues.

O. WESTOVER,
Major General, Air Corps,
Chief of the Air Corps.

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A series of tests recently completed at the Materiel Division, Wright Field, Ohio, to determine the most effective method of providing clear vision through airplane windshields, favored the rotating wiper blade, in combination with a heated windshield.

HALF A PROPELLER SHOWS TO ADVANTAGE

"HALF a loaf is better than none" is a time-worn expression, but the fact that half of some material thing can be better than a whole one in some instances is something which has been established in at least one line of endeavor - aviation.

It appears that, as a result of a recent development in propeller research activities, the conclusion may be drawn that half a propeller is better than a whole one. In the November 15th issue of THE SPORTSMAN PILOT, Mr. Arthur S. Pierce contributes an article of unusual interest on the subject of the Cropped Prop. Mr. Pierce goes on to say:

"A year ago the idea of flying an airplane with a single-blade, or half propeller, could scarcely have been advanced as a serious topic of conversation. Today, thanks to Walter W. Everts, Baltimore inventor, any discussion of the single-blade revolves around the principles of this innovation, or to put it simply: 'How in Tophet does the darn thing work?'

Last March I undertook to make a test of the sensational (at that time) single-blade propeller from Pennsylvania to the Pacific Coast. The single-blade had been first brought to public notice when an early model was flown to and exhibited at the National Aviation Show in New York City last winter. This model is now in the Smithsonian Institution.

Everts, or rather the Everel Propeller Corporation, agreed to equip a Cub with the single-blade for a flight to the Pacific Aircraft Show in Los Angeles. At Lancaster, Pennsylvania, we installed and tested the experimental model for the flight. Mr. Everts explained the principles of the device to me at much length and I hopped off, blithely confident that I knew the why and wherefor of the device swinging around the propeller shaft.

At the first stop in Pittsburgh I was able to confound the bystanders with a 'simple' explanation of the single-blade. After more pondering and after additional observation of the airspeed and tachometer for two more hours in the air, I began to elaborate on my theories. That night I slept in Chicago, and on the following morning I found that my simple explanation of the propeller had undergone considerable change. In fact, I couldn't understand my own explanation.

So it went. I demonstrated and explained at airports every hundred miles or so and each night I had the story down pat. And every morning I had to study the puzzle of my own devising. The propeller worked beautifully even though it was still in the experimental stage. According to my calculations, the Cub was cruising nearly ten miles an hour faster than usual in cross, head and countering winds. This gave me just that much less time to study its operation.

Today, after more study, I believe I can explain the single-blade propeller in a simpler manner. Walter Everts assures me that my explanation is technically correct.

The design of the single-blade propeller began in Everts' laboratory in Baltimore. Experiments with propeller models indicated to him that a single blade produced greater thrust than the conventional design. Try as he would Walter was unable to get results with various combinations of multiple blades that would equal the single-blade.

It had been shown in experiments - and Everts checked these previous findings - that an air stream smooths out to practically normal flow in one revolution of a blade. Thus, as a propeller blade passes a fixed point a great acceleration of the air stream takes place. Before the blade makes a complete revolution, the air stream reverts to approximately normal flow, allowing the blade to 'attack' smoothly flowing air at all times.

In Lancaster I witnessed an experiment designed to demonstrate this theory. A two-blade propeller for 40-horsepower motors was turned on a test block at rated top speed throwing a smoke stream. The smoke stream described a spiral.

A single-blade designed for 40-horsepower motors was then mounted on the test block and turned at its rated top speed. The smoke stream in this case traveled in almost exact straight lines with no spiraling effect.

After hundreds of experiments, Everts completed the design for a practical single-blade that promised to produce at least 25 per cent greater thrust than conventional two-blade propellers. In short, nearly sixty experimental full-sized blades and more than a dozen hubs and mechanisms were built and tested before 40-horsepower model of the single-blade was submitted for an Approved Type Certificate, which was received.

To begin with, the 'stub' and the 'blade' balance. The Center of Gravity of the stub and the Center of Gravity of the blade balance on the crankshaft in the same manner as a conventional propeller. A counter-weight in the stub compensates for the difference in weight between the blade and the short stub.

The counter-weight in the stub of the Everel is attached to the hub by a tube of nickel steel, eliminating any strain on the wood fibre around the hub. Balancing is accomplished by screwing this counter-weight forward or back on the steel shaft. An adjustment of hair fineness is possible.

The mechanism of the hub allows the

propeller to swing forward or back at will. Under the thrust, or air load, on the blade, the tip is inclined forward, while centrifugal force tends to carry the blade backwards towards a position at right angles to the crankshaft. In operation, a balance is achieved between these two forces.

This movement reduces any bending moments of the blade. The free fore-and-aft movement also reduces vibration and the transmission of gyroscopic forces to the airplane, and practically eliminates side strain on the crankshaft.

Engineers of the Everel company tell me there is practically no vibration period in the single-blade and that tests up to 5,000 revolutions per minute have verified this calculation. This is borne out by tests with a Vibrometer.

At Lancaster I also witnessed a demonstration of this finding. A model single-blade, about 20 inches long with fixed pitch, pivoted in the fore-and-aft direction, was revolved approximately 1,800 r.p.m.'s on a flexible shaft. To the eye there was no vibration of this shaft and the supporting bearing could be held in the hand without any feeling of vibration.

Now we come to the constant pitch, or variable pitch action of the single-blade. With the airplane held stationary at the blocks and the motor turning over at top speed, it is apparent from the foregoing that the blade will incline forward under the air load.

As the blade swings forward it also pivots to the lowest blade angle of attack, or low pitch. This, of course, is the angle which is most desirable for take-off and climb. The fore-and-aft movement and the pivoting action of the single-blade are accomplished on a single bearing.

When the airplane is released from the blocks and moves forward, the blade swings backward, under centrifugal force, toward the position at right angles to the crankshaft. As the blade swings backwards it also pivots to a higher angle of attack or pitch.

Between the points of high and low pitch, we always have a balance between centrifugal force and the air load, or thrust on the blade. This balance causes the blade to take the best pitch for the speed of the airplane. In addition, the variation in pitch under this balance is regulated by the condition of the atmosphere; that is, thin air or heavy air affect the pitch of the blade, causing an increase or reduction in the angle of attack.

On the trip to the West Coast, I was furnished with a concrete example of this atmospheric effect on the single-blade between Columbus, New Mexico, and Tucson, Arizona. It was necessary to reach 9,000 feet over sea level on this hop to clear mountains. At 8,000 feet, the revolutions per minute of the propeller began to slow down, proving two things. First, that the pitch angle of the propeller was increasing because of thin air and a decreased air load on the blade. Second, that the ceiling of that particular throttle setting had been reached.

Usually when the thin air effect begins to be apparent, it is manifested by increased revolutions per minute or racing of the propeller because of the lessened resistance of thin air and a lean mixture of the carburetor. By opening the throttle a trifle, it was comparatively easy to pull over the high terrain.

Summing up, the single-blade swings forward, taking the low pitch angle for take-off and climb; it swings backward as speed is increased, taking the best angle for speed and atmospheric conditions.

The single-blade is not limited to low horsepower planes. In designing the single-blade for commercial use, Everts and his engineers have had to discard all propeller theory and tables based on multiple blades and set up entirely new tables for the single-blade.

In other words, they have gone back thirty years and started from scratch in propeller design. The camber and chord of a single-blade propeller are different from conventional designs. Obviously it is more sensible to work out these designs on a 40-horsepower motor than on a 1,000-horsepower motor. But the principle is exactly the same, and while preparing models from 40 horsepower for sale, Everts and his staff are also well under way in calibrating single-blade tables up to 1,500 horsepower."

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Jamming of Ailerons by Ice

(Continued from Page 11).

trol column by as much as a fifth of its normal full movement. In every case it has been possible to free the ailerons by moving the control column further in the direction caused by the snatch, thus allowing the ice to clear, before resuming normal control. It is considered that any attempt to force the control column back to its normal position before clearing the ice may result in locking the ailerons, and the loss of lateral control.

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HELP WANTED

Correspondents to write about the Air Corps activities at Selfridge Field, Randolph Field, Scott Field and Wheeler Field. Haven't had the pleasure of hearing from these stations for some time. What's going on out there?

WAR SECRETARY SAYS AIR CORPS MUST BE READY

In his annual report to the President for the year 1937, the Hon. Harry H. Woodring, Secretary of War, among various other recommendations affecting the military establishment, advocates an increased strength for the Air Corps both in personnel and materiel. Touching on the present situation confronting the Air Corps, he states that the utilization of larger and more complicated types of aircraft have necessitated an increase in the number of officers assigned to that branch, and he adds that, unless more officers are authorized for the Army as a whole, an increase in the number assigned to the Air Corps can only be made at the expense of other branches which are already feeling keenly the shortage in commissioned personnel. The enlisted strength of the Regular Army, he asserts, should be recruited up to authorized strength of 165,000 and maintained at that strength during the next year. Additional enlisted men are required principally in the Air Corps and to fill anri-aircraft regiments of the Coast Artillery Corps.

With respect to the Reserve Corps, the Secretary of War states that at least 30,000 Reserve officers should be given two weeks' active duty training each year, this number being in addition to those on extended active duty with the Regular Army and the Civilian Conservation Corps.

Declaring that the most noticeable recent advances have been in aircraft, Mr. Woodring states:

"We now have on hand approximately 1,000 new military airplanes, nearly all of them less than 3 years old, and another 1,000 are under order. In addition, we have on hand several hundred serviceable planes, classified as obsolete. These older planes will all be replaced within the next year or two.

"Our goal in airplane strength is 2,320 modern, serviceable planes, to be attained not later than June 30, 1940. This number was recommended as highly desirable by the Baker Board 3 years ago. Subsequent studies have confirmed the conclusions of the Baker Board with respect to this number. Recent aviation developments have produced military airplanes of much greater speeds, with much greater range, and much more effective than any visualized 3 years ago. Hence, an air fleet of 2,320 planes today is several times more powerful than one of a comparable numerical strength a few years ago.

"Foreign countries are making heavy increases in the strength of their air arms and most of the first-class powers have many more airplanes on hand or under construction than we have. However, in quality our new planes are at least the equal and probably the superior, type for type, of any military airplanes in the world. Our program of airplane procurement does not contemplate attaining the numbers possessed by other countries. With our favorable geographic position and our determination to use our military strength only for defensive purposes, we believe that 2,320 military airplanes will be sufficient for our needs. If funds are made available we hope to attain this number by 1940. Thereafter, it will be necessary to procure approximately 500 new airplanes each year to replace obsolete and unserviceable craft and to keep our equipment abreast of current developments.

"It should be borne in mind that modern aircraft cannot be quickly improvised. The construction of airplanes necessarily takes considerable time. Hence, our peacetime strength should approximate rather closely our requirements in war. Furthermore, in a major war our air arm would probably be engaged almost immediately on the opening of hostilities. Therefore, it is desirable that it be practically on a war footing in time of peace.

"While we are procuring up-to-the-minute aircraft in sufficient quantities to bring our air strength gradually up to our requirements, we are at the same time encouraging the experimental development of new types so that we may continually improve the quality of our equipment. In this way we guard against overstandardization of airplanes and we are able to take advantage of technical improvements as rapidly as they are developed. * * *

"The program of modernizing the equipment of all components of the Army should be accelerated in order that we may quickly improve and expand such organizations as the Air Corps, the antiaircraft artillery, and seacoast defenses. * * "

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Due to the necessity of transporting power plants by air, it has been the aim of the Materiel Division at Wright Field to develop the lightest weight unit possible. The standard C-1 portable electric power plant, gasoline driven, of 110 volt, 2500 watt capacity, weighs 320 pounds. Recent developments have resulted in a design of power plant with the same capacity as the Type C-1, but weighing only 160 pounds, which is a considerable weight saving over the Type C-1. In the new power plants the generator and engine are integral with each other, all castings are of aluminum, and the engine is of two cycle design. The power plant is mounted on wheels, which are removable for transportation, and the overall dimentions are less than those of the standard Type C-1 power plant.

THE "COL. HORACE M. HICKAM" CHRYSANTHEMUM

It seems that the memory of the late beloved Colonel Horace M. Hickam is being perpetuated in more ways than one. Readers of the News Letter are aware of the fact that a large flying field in Hawaii now in process of construction has been named in honor of the deceased Air Corps officer. It has been brought to our attention that, at a recent exhibit of Fall flowers in Washington by the U.S. Department of Agriculture, a variety of chrysanthemum which attracted considerable attention bore the designation of "Colonel Horace M. Hickam."

It has since been learned that this variety of chrysanthemum criginated in the greenhouses of Mr. Tom Knipe, a florist of Kokomo, Indiana, whose wife is the sister of Colonel Hickam. Mr. Knipe states that this variety showed such high quality of bloom and such large size that both he and Mrs. Knipe deemed it worthy of a very fine name, and therefore they named it in memory of Colonel Hickam.

This variety of chrysanthemum was exhibited in the National Chrysanthemum Show in Detroit in 1935, and won the silver medal of the Society of American Florists for the best new seedling chrysanthemum in the show. It was also awarded the first prize in the same Show for the best twelve yellow chrysanthemums exhibited. It matures about the middle of November and should be bloomed on a terminal bud. It is a very large golden yellow exhibition variety, and Mr. Knipe, who is Vice President of the Chrysanthemum Society of America, believes it is superior in size and quality of bloom to any other yellow exhibition variety at present on the market.

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BOUQUETS FOR THE B-17

The Second Bombardment Group, declares the Langley Field Correspondent, will always remember 1937 as the year in which they received the B-17 airplane and entered a most interesting phase of training, missions based on greater range and higher speeds than ever before.

The first few months were devoted to transition and making necessary minor changes for improvement or safety in the airplane. The next three months were devoted mainly to performance flights to obtain the true performance of this plane at all altitudes, speeds and wing loading.

The last period is being entered now, one devoted to navigation, bombing and gunnery. Not only is there the usual navigation school conducted on the post, but each squadron has its own school, conducted by an experienced navigator, who instructs the other members of the B-17 crews in the fundamentals of navigation.

Protection from wind blast, coupled with ease of manipulation and a stable platform from which to fire, has encouraged gunnery tremendously, as is evidenced by the expenditures of 30 calibre ammunition this year. Marksmanship has improved correspondingly.

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FAST GOING IN SUBSTRATOSPHERE PLANE.

Officers stationed at the Air Corps Materiel Division, Wright Field, namely, Captains A.H. Johnson and T.A. Sims, Air Corps, pilots, with Major F.F. Reed, Ordnance Department, and Captain H.G. Armstrong, Medical Corps, as passengers, accomplished an exceedingly fast flight in the Army Air Corps substratosphere airplane on November 2nd. Taking off from Chicago, they passed over Chanute Field at an altitude of 19,000 feet. At this point they started timing the flight and proceeded to Wright Field. An altitude of from 19,000 to 21,000 feet was maintained over this course, and the distance of 220 miles was covered in 38 minutes. This averages close to 350 miles per hour. With the substratosphere airplane no oxygen equipment or heavy clothing were necessary at the highest altitudes, due to the supercharged cabin feature.

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AIR CORPS OFFICERS AS LECTURERS

Among the Wright Field officers who are rendering the Air Corps a special service through lectures on Air Corps activities are Captain T.A. Sims, who talked before the Rotary Club of Piqua, Ohio, on November 9th; Lieut. H.H. Tellman, who lectured before the University of Dayton on November 10th; Lieut. E.S. Perrin, who lectured before Miami University, Oxford, Ohio, November 11th; and Captain A.H. Johnson, who lectured before the Gyro Club of Cincinnati, Ohio, on November 11th.

Scheduled for lectures in the near future are: Lieut. H.M. McCoy, who will talk before the Lion's Club of Hamilton, Ohio, on December 1st, and Lieut. L.E. Massie, who will talk before the Society of Military Engineers and Reserve Officers at Cincinnati on December 8th.

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The 21st Reconnaissance Squadron at Langley Field, Va., has only recently been equipped with the B-18 type airplanes which are proving, in the main, satisfactory for reconnaissance missions. All the personnel of the outfit are enthusiastic about them, which augurs well for the missions the Squadron may draw in the future from Brigadier General Gerald C. Brant, Commander of the Second Wing.

USE OF RADIO AS AN AID TO NAVIGATION

After several experiences in locating the cone of silence and letting down through solid overcast in actual bad flying weather, and feeling convinced that there was a need for a compendium of best methods and procedure in such cases, in view of the fact that there seems to be little information on the subject available in written form, Lieut. Colonel Junius W. Jones, Air Corps, Commanding Officer of Chanute Field, Rantoul, Ill., directed Captain Hugo P. Rush, of that station, to prepare some notes on this subject, and which are quoted hereinafter. Certain points discussed in these notes are quite controversial in character. While the opinions expressed are those of an individual who has had considerable experience in the use of radio aids to air navigation, they are not necessarily to be construed as officially accepted and recognized methods.

The notes prepared by Captain Rush are as follows:

1. When heading for a station try to get on a leg of the radio range at least 15 minutes before estimated time of arrival for the following reasons.

a. It offers time to get accurately a line in the Twilight Zone which will frequently save working an orientation problem.

b. By obtaining a compass reading necessary to remain in the Twilight Zone which is valuable in case the station starts a broadcast.

2. When approaching a station maneuver constantly between the Twilight Zone and the Oncourse Signal. When in a Twilight Zone head for the Oncourse Signal and when receiving an Oncourse Signal head for the Twilight Zone. This assists in accurately obtaining a heading of the radio range leg, and in a measure indicates the distance from the station by the rapidity that changes in heading are necessary.

3. Always be sure that you are flying with the volume control on manual. If necessary to use automatic, keep in the Twilight Zone to facilitate location of the radio range.

4. If static is bad, or signal strength varies, clearly keep in the Twilight Zone.

5. Check reliability of radio reception by tuning in on stations while at a considerable distance from a station.

6. The cone of silence or the station can frequently be located more easily or more positively at medium altitudes of 1500 to 3000 feet than by flying at extremely high altitudes because the build-up and fading after passing a station is much more rapid.

7. Upon approaching a station, keep volume turned down to the point where the signals are just audible. It is of some assistance to turn the volume extremely slowly, as when approaching stations it will require almost constant turning of the volume control in order to keep the signal strength down.

8. When maneuvering near the station and making 270 degree turns, turn away from the station rather than towards it.

9. If time for gasoline is of importance, circle during interruption of beam as it usually saves time in the long run.

10. Look upon every range or combination of ranges with suspicion and for the best approach, as usually one is much easier than the other. Plan circling pattern for loss of altitudes, listing altitudes and courses and times before reaching the station.

11. Read altimeter each time, starting from small hand to a large hand, for instance: 1,700 rather than glancing at the hand which indicates 700. This will assist in avoiding errors of an even 1,000 feet. Establish a minimum altitude before reaching the station, usually field altitude plus 3 or 400 feet, depending upon location of obstacles.

Cone of Silence:

Perhaps too much emphasis has been placed on locating the cone of silence and insufficient emphasis placed on the maneuvering pattern for arriving over the field at minimum altitude. Upon locating the cone of silence, maneuvering should begin at once on a predetermined plan and the changes of signal from one course to various sectors. At least three changes should be used to definitely determine that the cone of silence was true and not false.

13. Circling during interruption of beam can be avoided if the leg of the beam has been accurately lined up. This can be accomplished by turning at least 10 degrees to the right until the beam is again placed in operation. If the station has been passed during the broadcast, it will become immediately apparent, due to the complete change in signal.

14. If there is no change of signal when receiving the beam other than to indicate to move further into an A or N Zone, head back to the radio range the same amount. This maneuver will assist in eliminating any possibility of passing from one side of the radio range to the other side of the radio range where the same signal would be received.

In transmitting these notes to the Information Division, Colonel Jones states that, while there are one or two points therein in which he does not fully concur, he believes they are a step in the right direction and that they should serve as a starter upon which to build something in the nature of an Instrument Flying Manual.

(Continued on Page 18).

OSCILLATING BEACON

Results of service test of a new type of beacon, known as the oscillating beacon, have recently been received at the Materiel Division, Wright Field, O.

The optical arrangement of this beacon consists of a 360° Fresnel lens with axis of symmetry placed vertically. The light source, a 1500-watt, 32-volt lamp with special barrel type filament, is so designed that it is periodically raised and lowered from the focus, the motion being along the axis. The resulting beam, which is transmitted 360° radially, sweeps from the horizontal upward to approximately 8° above the horizon, and then downward to the horizontal. The lamp operates at approximately 40 strokes per minute. The signal transmitted to the observing pilot is normally 80 flashes per minute as compared to 6 flashes obtained with the conventional rotating beacon.

Other advantages of this beacon are as follows:

a. The time interval between flashes is small.

b. The effect is independent of altitude.

c. The beacon is especially effective during bad weather, when needed the most.

During the service test of this beacon at Mitchel and Selfridge Fields, practically unanimous approval for standardization was given by all pilots who observed it. Action has been initiated to standardize the same, and it is contemplated that all major stations will ultimately be supplied with this equipment.

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AERIAL PHOTOGRAPHIC TESTS

Captain C.W. O'Connor, Air Corps; Captain L.J. Rumaggi and Lieut. F.J. Dau, Corps of Engineers, recently took off from Wright Field, Dayton, Ohio, for Fort Sill, Okla., in a B-10B airplane which had been specially modified for flying new experimental types of Air Corps cameras. Their mission was to obtain photographs of the areas immediately contiguous to Fort Sill, for use by personnel of the Corps of Engineers at the Materiel Division for the preparation of Fire Control Data Sheets of the Fort Sill, Area. On this mission, which was covered in nearly a week's time, two cameras were used, the tandem T-3A (5 lens) and the experimental 4-inch wide angle type. Three flights were made at 20,000 feet, and personnel worked at that altitude some eight hours during the week.

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During the month of October, the Engineering Department of the San Antonio Air Depot overhauled 17 airplanes and 66 engines, and repaired 42 airplanes and 17 engines.

COLONEL McCHORD'S MEMORY HONORED

The new Northwest Army air base at Tacoma, Washington, has been designated "McChord Field," in honor of the late Colonel William C. McChord, Air Corps, who was killed in an airplane accident near Maidens, Virginia, on August 16, 1937. The announcement was made in War Department General Orders issued recently. The War Department policy is to name Air Corps fields and stations in honor of flying officers of the Air Corps Regular Army, or of the Air Corps Reserve, who have died in line of duty and who have had long, loyal and exemplary service.

Colonel McChord had been affiliated with military aviation since the World War. Previous to that time he served with the Cavalry, in which branch he was commissioned a second lieutenant on June 14, 1907, following his graduation from the United States Military Academy.

Colonel McChord was a graduate of the Mounted Service School, Fort Riley, Kans. the Air Corps Tactical School, Langley Field, Va.; the Command and General Staff School, Fort Leavenworth, Kansas, and the Army War College, Fort Humphreys, D.C. He served as Commanding Officer of Park Field, Millington, Tenn.; Gerstner Field, Lake Charles, La.; Chanute Field, Ill.; as Air Officer of the 6th Corps Area, and as Commanding Officer of the 19th Composite Wing, Panama Canal Department. Upon the completion of his foreign service duty in 1935, he was assigned to duty in the Office of the Chief of the Air Corps, and at the time of his death was Chief of the Training and Operations Division of that office.

McChord Field has an area of 1310 acres. The area selected for the site comprises the Pierce County Airport (also known as the Tacoma Airport), consisting of approximately 960 acres, and was donated to the Government through the Board of County Commissioners of Pierce County, Washington. The Congress recently authorized the purchase of an additional 350 acres to be included in the area occupied by the air base.

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Use of Radio as an aid to Navigation

(Continued from Page 17)

Referring to par. 6 of these notes, Col. Jones states he has not found it easier to locate the cone of silence between 1,500 and 3,000 feet than at a higher altitude, his experience being that the higher the altitude the wider the cone of silence and the more pronounced the fading. As to maneuvering after locating the cone of silence, he declares his experience is that the best procedure is to fly in one straight line, say, 5 minutes, to one side of the cone of silence; then turn 180 degrees and fly back 10 minutes, putting you 5 minutes on the other side of the cone of silence, timing your location of altitude so as to be approximately over the cone of silence when you break through.

CLASSES AT AIR CORPS TECHNICAL SCHOOL

With the Maintenance-Engineering, Communications and Photographic classes well under way, academic activities at the Air Corps Technical School at Chanute Field, Rantoul, Ill., are fairly humming.

Among the student officers in this year's classes are one Marine Corps officer and one officer from the Philippine Constabulary.

The following is a roster of the student officers:

Maintenance Engineering: 1st Lieuts. Clayton E. Hughes, Thetus C. Odom, Carl F. Damberg, Frank G. Jamison, Charles B. Dougher, Richard M. Montgomery, 2nd Lieuts. Byron E. Brugge, Jack E. Shuck, Charles B. Harvin, Lawrence S. Fulwider, Burton W. Armstrong, Jr., Air Corps, and Captain Zebulon C. Hopkins, Marine Corps.

Communications: 1st Lieuts. William R. Morgan, James McK. Thompson, George F. Hartman, Edward J. Hale, Travis M. Hetherington, Vernon C. Smith, Samuel A. Mundell, George B. Dany, John W. White and 2nd Lieut. Jasper N. Bell, Air Corps.

Photography: 1st Lieuts. Thomas R. Starratt, Jerald W. McCoy, Donald L. Hardy, 2nd Lieuts. Hilmer C. Nelson, Air Corps, and 3rd Lieut. Jesus A. Villamor, Philippine Army.

In addition to the above 28 officers, the school rosters list the following number of enlisted students:

Department of Mechanics	178
Department of Armament	63
Department of Photography	63
Department of Communications	148
Department of Clerical Instruction	19

During the present year, it is expected that over 1200 enlisted students will be graduated and sent to service organizations.

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TESTS ON NEW MOTORIZED BALLOON COMPLETED

The War Department recently announced the completion of the initial phase of experimental tests on the C-6 motorized observation balloon at Fort Sill, Oklahoma. These tests have been in progress since early September and several hundred flights have been made under a great variety of wind and weather conditions.

The C-6 brings many novel and interesting features to the observation balloon field. The war-time captive balloon, known as the "sausage," and which has remained practically unchanged to the present time, was moored by a cable to a winch. To move it over the terrain when changing its station for observation, it was necessary to "walk" it overland, where power lines, fences, trees and other obstacles made progress slow and difficult, or to pull it down, deflate, roll it up and move it by truck - also a time-consuming process. The C-6 has the advantage that it moves under its own power across country, while its winch moves by a motor; arriving at the proposed rendezvous or ascension site, the balloon lands and is attached to its winch. Thereafter it performs the normal functions as a captive balloon, affording a stationary platform at high elevation for directing artillery fire.

Another great advantage possessed by the C-6 lies in the fact that this new balloon is filled with helium, a non-inflammable and non-explosive gas, while the older type was hydrogen filled, making it much more vulnerable to attack and much more likely to be destroyed by storm or fire.

The C-6 Balloon is 107 feet long and 30 feet in diameter and contains 52,000 cubic feet of helium. The old type "sausage" it replaces was 95 feet long, 27 feet in diameter and contained 37,500 cubic feet of hydrogen. The new balloon is powered by a 90 horsepower Lambert motor, mounted in a detachable car, giving the craft a speed of 40 miles per hour.

Major Ira R. Koenig, Balloon Squadron Commander at Fort Sill, Okla., has charge of the tests, assisted by Major W.C. Farnum as operations and engineering officer, and Staff Sgt. Joseph F. McMurray as operations clerk. The balloon was delivered from the lighter-than-air depot at Scott Field, Belleville, Ill., and set up by Master Sergeant Joseph A. Bishop and Staff Sgt. Harrison C. Finley, both of long technical experience in lighter-than-air service at the Depot.

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INTERESTING FLIGHT BY CAPTAIN WITTKOP

An interesting flight in a B-17 Bombardment airplane was recently made by Captain Hilbert W. Wittkop, of the 96th Bombardment Squadron, Langley Field, Va., the take-off being at 5:00 a.m. for Maxwell Field, Ala., via Barksdale Field, La. A report of the flight follows:

Clouds were encountered at 2,500 feet shortly after take-off and flying conditions became worse with altitude. No breaks were discovered up to 7,000 feet, so altitude was lost to 2,000 feet in an attempt to get underneath the ceiling. Being still blind at 2,000 feet, the flight was continued on instruments.

Passed through rain at 8,000 feet and emerged into broken clouds at 6:40 a.m. Clear weather but considerable turbulent air prevailed, with strong NW and W winds. Descended to 4,000 ft. at 8:30 a.m., in an attempt to find more favorable winds. Definite check of position at Chattanooga indicated 150 m.p.h. ground speed.

Arrived over Barksdale Field at 11:00 a.m. Dropped 20 bombs in four approaches from 7,000 feet and departed for Maxwell at 12 noon. Landed there at 2:45 p.m., after an uneventful trip. The time required from Langley-Barksdale Maxwell Fields was 9 hours and 45 minutes.

From 3:45 to 5:15 p.m., the B-17 was inspected by delegations from the National Guard Convention. The B-17 was obviously the center of interest and members of the inspecting party appeared favorably impressed.

Taking off from Maxwell Field at 3:25 the following morning, an unlimited ceiling and favorable winds gave a ground speed in excess of 200 mph. Humorous is the thought that the ground speed was so high that it was necessary to throttle well back when leaving Spartanburg, S.C., so that Langley Field would not be reached before daylight. The landing at Langley Field was made at 7:15 a.m., time 3 hrs. 50 min.

OBITUARIES

Two Air Corps officers, 1st Lieut. Thomas C. Morgan and 2nd Lieut. Loyal C. Woods (Res.), stationed at Randolph Field, Texas, lost their lives in an attempted landing after dark on November 26th, in the vicinity of the CCC Camp at Greenwood, S.C. Lieut. Morgan was pilot of the BT-2C plane, and Lieut. Woods, passenger.

Lieut. Morgan, who was a West Point graduate, Class of June, 1932, was a native of South Carolina and was born on September 29, 1907. Following his graduation from the Military Academy, he was commissioned a second lieutenant of Infantry, and applied for flying training at the Air Corps Training Center. He graduated from the Primary Flying School, Randolph Field, June 30, 1933, and from the Advanced Flying School, Kelly Field, Texas, October 14, 1933, on which date he was rated as "Airplane Pilot."

Assigned to duty in the Hawaiian Department, he served with the 4th Observation Squadron at Luke Field. Upon the completion of his two-year tour of duty in Hawaii, he was transferred to Brooks Field, Texas, where he served for about 16 months, and was then transferred to Randolph Field.

Lieut. Woods had a rather varied career prior to his assignment to duty with the Air Corps. He was born at Green Isle, Minn., September 25, 1906. After attending the University of Washington, Seattle, for two years, and the Wilson Business College of that city for eight months, he took a two-year course at the University of Southern California. He specialized in mechanical and electrical engineering and gas chemistry.

In 1926, Lieut. Woods was in the employ of the Western Oxygen Company, and on week ends flew a "Jenny" which he personally owned. In the following year he was employed by the Western College of Aeronautics and was engaged in enrolling students and teaching the theory of flight. Thereafter for several months he was employed as an automobile mechanic for a motor car concern in Seattle, and then went to work for the Northwest Flying Club, enrolling students and teaching theory of flight, together with aircraft maintenance. He performed the rigging on the airplanes and kept the motors in repair.

In the spring of 1929, Lieut. Woods went to Alaska, where he assembled a JN4D airplane from its original crates and flew it for the next two years on passenger flights and student instruction. He had no assistance in assembling or rigging of this airplane or in servicing or maintaining it during the entire time he flew it. Returning to the States in 1930, he was employed for brief periods as an acetylene welder for a construction company and as a solicitor for an air transport concern. He then entered the employ of a California Dental Supply Company, and in his spare time kept up his flying at the Culver City Airport by instructing students and hauling passengers.

During his connection with commercial aviation, Lieut. Woods flew fifteen different types of commercial aircraft. Having completed subcourses in Theory of Flight, Aerial Navigation and Meteorology, and after satisfactorily completing a written examination in other required subjects, and demonstrating his proficiency as a pilot before a board of officers, he was appointed a second lieutenant in the Air Reserve on September 24, 1936, and given the rating of "Airplane Pilot" on the same date. In September, 1937, he was ordered to Randolph Field, Texas, for a special course of instruction.

On Monday, November 15th, while on an authorized Pursuit transition flight from Kelly Field, Flying Cadet Alfred J. Vapitell, Observation Section, Advanced Flying School, was killed when his Pursuit plane which he was flying struck the top of a tree four miles west of Boerne, Texas. The body of the Flying Cadet and the wreckage of his plane were found on Mr. C.C. McFarland's ranch. The remains of the late Flying Cadet Capitell were sent to Boston, Mass., accompanied by Flying Cadet Richard A. Ames. A Board was convened to investigate the cause of the crash.

The deceased Flying Cadet was a graduate of Notre Dame University of the class of 1935, and started his flying training last February at Randolph Field. Surviving are his parents, Mr. and Mrs. Alfred R. Capitell, of Belmont, Mass.

The sincere sympathy of the Air Corps is extended to the relatives and friends of the deceased airmen who died in the service of their country.

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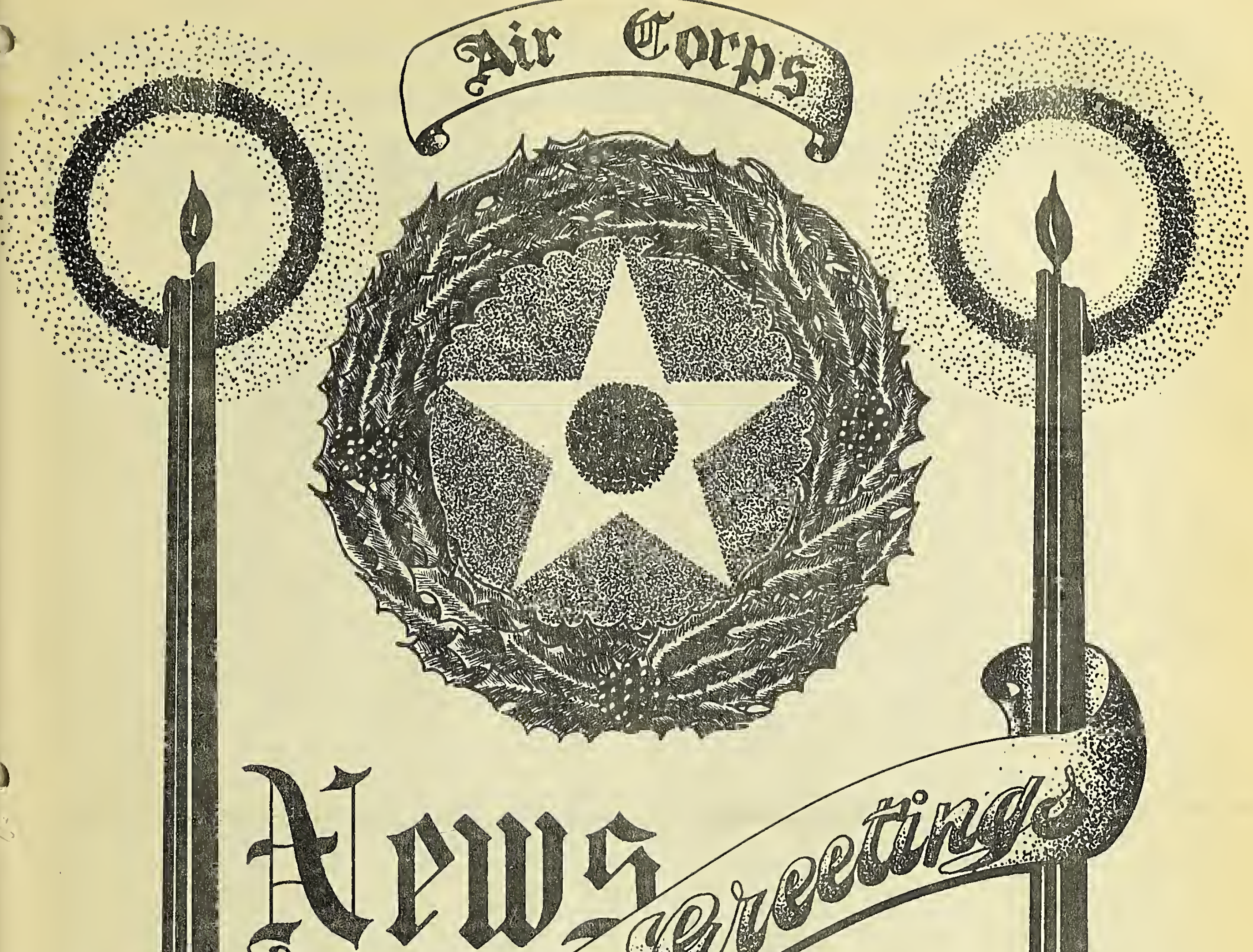
SERVICE TEST OF Y1A-18 ATTACK AIRPLANES

Conclusion of the initial phases of the service test of the Air Corps' new twin-engined Attack airplane, the Y1A-18, at Barksdale Field, La., was recently announced.

This new type was designed and built by the Curtiss Airplane Company, Buffalo, N.Y., to fill a particular need often expressed in Army Attack circles for more speed, greater armament load, and higher performance combined with greater visibility for the combat crew. It has been undergoing secret tests in the 3rd Attack Group of the GHQ Air Force, where its maintenance characteristics, flying qualities and military utility are being compared with those of single-engine Attack planes and with the desired requirements.

All these features the manufacturer has endeavored to design into this new article. Its twin engines, added power and special design give it greatly improved visibility for the pilot, a very necessary requirement in view of the low altitude at which Attack planes do their military missions. Daily during the past two weeks, pilots of the 3rd Attack Group flew these new planes over the gunnery and bombing range, firing the machine guns and dropping bombs to test in hard-flight service every feature thereof.



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VOL. XX AIR CORPS NEWS LETTER NO. 24.
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The chief purpose of this publication is to distribute information on aeronautics to the flying personnel in the Regular Army, Reserve Corps, National Guard, and others connected with aviation.

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A YEAR END MESSAGE FROM THE CHIEF OF THE AIR CORPS

The season of the year which is now upon us is an opportune one to reflect upon those things which we may well count our blessings. Looking to the many places in the world where wars are now raging or imminent we in the United States can be especially thankful that our country is at peace with all the nations of the world.

We in the Army Air Corps can be thankful for a year spent in productive activity, the total result of which has done much to promote and insure that peace. As we look back over the last twelve months of our activity and endeavor, we find the year 1937 to have been one of the bright years for the Army's flying arm and, for that matter, for aviation - military and civil - the world over.

Our success in the flying arm has been due, in no small degree, to the strong support of the War Department and the Army, as a whole, and to the close cooperation of other branches of the service. We have also been supported strongly and aided freely by many other agencies and establishments of the Federal Government, all of which we acknowledge with gratitude.

We have problems, true; we have difficulties yet to be overcome, but we know what those problems and difficulties are and we have made plans to meet them. We have not sat slovenly and sluggishly by and done nothing about those phases of air development and organization which required attention. We have not been unmindful of the fact that many foreign countries have, during the past year, made giant strides in an effort to develop air forces inferior to none in the world. We have realized that our problem in the Army Air Corps has been two-fold: first, to keep abreast of aeronautical research, experimentation and development, to insure that our Army airplanes, type for type, are at least the equal of those found elsewhere in the hands of any possible adversary. We have accomplished that result. I can state emphatically that that is not only true, but that some of our types are superior to those available anywhere else in the world. We know that our ability honestly to make that remarkable statement is due to the funds and energies we have spent on aeronautical experimentation, but we realize that several other countries have, during the past year, placed an uncommon emphasis on experimentation and, in some cases, probably are now spending more money than we in this country on this subject. That means that their airplanes three to five years from now will be superior to ours, unless we increase our funds for experimentation, research and development. We shall leave nothing undone in our effort to accomplish that result. The other score on which our energies have been exerted is on organization and training of those units and that personnel which we have had available in the Army Air Corps during the year. Our GHQ Air Force has ably superintended, supervised and controlled that training program to the end that I feel the Army can justly say there is no other air force in existence which exceeds it in training, in individual and unit efficiency. There may be larger ones, but none is better. Size for size it compares more than favorably with the best.

Our present respected and enviable position in the world in the air, so far as military flying is concerned, is directly due to the earnest and sincere efforts and untiring energies of our officers and men of the Corps. I wish to thank each of you for your individual efforts which have borne the collective result I have just outlined, and wish for each of you and your families a Happy Holiday and successful New Year 1938.

May we all continue our earnest and concerted effort with the result that our country may be afforded ample air defense!

O. Westover

Major General, Air Corps,
Chief of the Air Corps.

THE NATION'S LARGEST EMPLOYER AND ITS "LABOR BOARD"

By the Hamilton Field Correspondent

The United States, as the largest employer of men in this country, has demonstrated that there need be no such thing as a labor problem.

Every day new men enter military life - men as different as night and day - men of all temperaments, trades, ages and training; men from all States and nearly every county in every State; poor men, rich men. Yet these men quietly and unobtrusively, without fuss or flurry, are assimilated, trained, and take their place as units of the national defense.

In the Air Corps especially has the personnel problem been acute. From vastly varied sources come recruits who must within a few months' time assume positions of great responsibility. On their technical knowledge and training in any one of hundreds of aeronautical crafts depends the safekeeping of valuable military aeronautical equipment and the lives of those who defend our nation in the air.

Upon the organization of the GHQ Air Force, the personnel problem reached its zenith. In order to place each soldier in the one spot he is most fitted by trade, temperament, and desire, Major General Frank M. Andrews, Commanding General of the GHQ Air Force, initiated a system of personnel classification.

Under this personnel plan, each man entering the Army is examined thoroughly as to his previous training, his mental aptitude, and his personal desires, by a board of officers situated at each air base of the GHQ Air Force. Upon the classification of this Board depends the future assignment and type of work done by each soldier entering the Air Corps.

The system works like this:

"Bob" Brown has just enlisted for the Air Corps at Hamilton Field at his home (let us say Portland, Oregon). Brown has been outfitted as a soldier at Portland and given transportation to Hamilton Field. On arrival at this air base, Brown is first of all interviewed by Major Edward D. Jones, Air Corps, S-1 and Chief of Personnel at Hamilton Field. In this interview, Major Jones secures as far as possible every scrap of information concerning the recruit which would be of advantage either to the soldier or to the Government to know. He learns about his educational qualifications, his vocational knowledge, his hobbies, his past work, his preference as to kind and place of work. Brown says that he is a high school graduate. He has lived on a farm his entire life and he is very interested in trucks and automobiles. He has never done any professional work on gasoline engines but he has always "tinkered" with them on his father's farm. Brown then goes to the garage, where he is given the opportunity to tear down and repair one of the seventy odd trucks, tractors, cars and motorcycles which are used at Hamilton Field. This test determines whether or not Brown has any aptitude for such work and, if so, whether or not he needs further training. The interview and results of the trade test are then placed before the personnel classification committee, composed of specialists in each of the many trades followed at Hamilton Field. The member of the committee who is a specialist in automotive repair then reports whether or not Brown is suitable for assignment to the garage. If he is not suitable, Brown is then tested in another trade of his preference. If he is suitable, Brown is assigned permanently to the garage where he either assumes the responsibility of a trained mechanic or undergoes a thorough apprenticeship at the hands of instructors, according to his ability.

The classification board then has achieved three very tangible results with Bob Brown,- first, it has made the most desirable use of his services so that the government gets value received for his wages; second, competent hands have been chosen to work upon valuable Government property and thus safeguard the taxpayers' investment; third, Bob Brown has been placed in a position that he especially likes and one which, through his interest, will furnish him a valuable and worthwhile trade after his enlistment in the Army.

True, this is far from being Brown's sole assignment to duty. He has other things to learn - strictly military subjects. He, as well as every other man entering the Army, must undergo an intensive period of recruit training in which he learns drill, military hygiene, and similar subjects necessary for his well being, but Brown, placed in a particularly interesting position as his main duty, is a satisfied, efficient workman.

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Western Air Express set a new passenger record over their San Diego-Salt Lake route last September with the flying of nearly one million passenger miles, a total of 3,500 passengers being carried over its system from Great Falls to San Diego. Nearly 65,000 pounds of mail were flown, a twenty percent increase over the corresponding month in the year 1936. Over twenty tons of air express were carried.

"YOU CAN'T PARADE THEM LIKE SOLDIERS"

By a Power Plant Engineer

High output engines have sounded the death knell of the would-be Napoleons on big white horses who like to watch the boys go by in fancy parade on the ground.

Those of us who lean toward the academic side of the situation know that B.M.E.P.'s (brake mean effective pressures) have practically doubled since the good old days. All the technical ingenuity of man has been gathered together to guide every available molecule of air around through the fins of our air-cooled engines. Even under the most favorable conditions, heat transfer from the engine to the air is scarcely adequate.

On the ground all of these troubles are magnified many times. In fact, some of the better informed authorities claim that we are wearing our engines out on the ground and not in the air. Included in this category is our old mechanic, brought up on O.X.'s and Liberties, who must park his ship on the line and let it buzz for one-half hour each morning. "If the airplane and engine were working all right the evening before, why the half hour to find out the same thing the following morning?" he asks.

Cowl design and prop wash cause some fancy airflows, particularly in air-cooled engines when operated at less than flying speed. Such variations may prove to be anything from reverse flow to practically no flow at all through the fins and the cylinders.

With reference to our new high output liquid-cooled engines, a similar condition prevails. Radiator and oil cooler airflow depend, for adequate cooling, entirely upon the high air speed of the airplane. To obtain high performance we must produce low drag, etc. Any type of large air scoops which will be adequate for cooling while parading airplanes on the ground, or during mechanic's warm-up, means a tremendous sacrifice of speed in the air. These details will be self-evident to the tactical pilot upon his first contact with the newer airplanes now leaving the industry. From the standpoint of airplane and engine efficiency, all pilots should develop the habit of getting comfortably settled in the cockpit and being ready for take-off shortly after starting the engine. If the engine is running on the ground, remember - every minute of fidgeting in the cockpit costs money.

Advice for take-off formation from the materiel standpoint is - get in your airplane, get comfortable, start your engine, taxi out, and get going, or you may not get over the fence at the end of the field.

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FAST TRAVELING FOR B-17's

Three B-17 Bombardment airplanes, commanded by Major H.L. George, with wing ships being flown by Captains H.M. Wittkop and D.H. Alkire, departed on November 14th from Langley Field, Va., enroute to March Field, Calif., the southern route to Maxwell Field, Ala., and then a Mercator course of 273 degrees to destination being followed. The weather was excellent, but head winds of gale velocity reduced the ground speed at times to 125 m.p.h.

Radio communication with the 2nd Wing was maintained for approximately 1900 miles, and with the 3rd Wing for about 1,000 miles.

No excessive fatigue was experienced by the crew, but the altitude of 12,000 feet over such a protracted period necessitated the use of oxygen. The take-off from Langley Field was at 21:00 EST on November 14th, and the landing at March Field was at 12:00 EST, November 15th.

The return trip to Langley Field was made via Randolph Field, Texas, and proved rather uneventful. The elapsed time between March Field and Randolph Field was 4 hours and 45 minutes, while that between Randolph and Langley Fields was 8 hours and 30 minutes.

FIELD TRAINING FOR 4th OBS. SQUADRON

The 4th Observation Squadron, statione at Luke Field, T.H., recently returned to its home station after spending a week in field training at South Cape, Hawaii. Although handicapped by high winds, an excellent camp was established and a great deal of useful field training was accomplished. The entire personnel and equipment was transported by air, which in itself served as an important training item. Twelve officers and thirty-one enlisted men made the trip.

The Black Widow Spider population, previously reported upon in the News Letter, seems to have decreased slightly, and the News Letter Correspondent expresses the hope that this decrease may be attributed to the toads which were imported about a month ago in the belief that the spiders would appeal to them as an article of diet.

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It is the purpose and desire to publis in the News Letter items of interest covering activities at all Air Corps fields and stations. Contributions will be welcomed from Randolph, Brooks, Wheeler and Albrook Fields from which no news has been received for some time.

ACTIVITIES OF THE 97TH OBSERVATION SQUADRON

By the Mitchel Field Correspondent

The 97th Observation Squadron (Corps and Army), Air Corps, at Mitchel Field, N.Y., seems to be school-wise these days. Everywhere we turn in this outfit we find some form or evidence of squadron or individual schooling instinct, and it is satisfying to note this, particularly when so much is being published on modern GHQ aviation - readiness for combat, keenness, military efficiency, etc.

The 97th Observation Squadron (Corps and Army) is, in fact, an M-Day Force. It is now a 130-man outfit. This increase was recommended by Major George C. McDonald, Air Corps, former squadron commander and now a student at the Command and General Staff School, and has been kept active by the present skipper, Major Charles A. Horn, Air Corps.

The first step in this direction was the appointment of officers to combat crews and the establishment of flights, with regularly assigned pilots, observers, mechanics, radio operators, photographers, etc. This system has been used daily for the past year, and its practicability most definitely indicated by the Squadron's outstanding success during the summer season of 1937, when one or more airplanes have been detached from the Squadron, operating in the field in cooperation with all types of ground arms, away from home airdrome for periods of as much as three weeks. On these missions the duties performed and field conditions encountered were very much similar to those which it is anticipated would exist under actual service conditions.

The second move was the formation of an actively functioning squadron intelligence section. Believing this a most necessary section for any Air Corps organization, and particularly so for an observation unit in times of peace or war, the present squadron commander designated 1st Lieut. Richard H. Wise, Air Corps, as Squadron Intelligence Officer, with two Reserve officers as assistants - 2nd Lieuts. Alfred G. Witter and Sterling G. Harvey. These officers have been instructed in the primary functions and channels of an Army Intelligence System, its close relation with Operations Plans and Training, and some emphasis placed on the prompt rendition of complete and accurate observers' reports, care in taking aerial photographs, methods of successful cooperation with various ground arms, etc.

Since the beginning of the present fiscal year, this Squadron has been conducting ground schools and "rainy day" schedules for both officers and men. The officers' courses include Ground and Air Rules; Airplane and Engine Maintenance; Communications; Armament; Instruments; Photography; Meteorology; Air Navigation; Chemical Warfare, and Technical Administration. This instruction will be continuous throughout the training year. All enlisted men are schooled in subjects relating to their particular departments, and have recently undergone unofficial rigorous practical examinations in preparation for the forthcoming annual Air Mechanic examinations.

The Squadron has been sending its regular quota of enlisted men to the various courses conducted at Chanute Field in the Air Corps Technical School, and has a long waiting list for this activity. The latest orders include: Armament, Pvt. 1st Cl. John D. Pardee; Photography, Pvt. Herbert A.E. Ruhrman, and Radio Communications, Pvt. 1st Cl. Carmen R. Gismondi. In addition, there are two men now attending the base radio flight operator's course. Two officers of this organization were sent to that school within the past six months, and another detailed to study weather at the California Institute of Technology. A previous squadron commander is now attending the Command and General Staff School, and the present "Skipper" is under orders for the same course, beginning in the Fall of 1938.

In addition to these activities, it has been noticed that a number of the enlisted men are spending a great deal of spare time and a few spare nickels in the night schools of nearby Jamaica and Brooklyn. Others are pursuing various correspondence courses for theoretical technical training, and at least three are now enrolled in the 2nd Corps Area Army Extension Schools with a view to ultimate commissions in the Officers' Reserve Corps.

All this is taking place to the end that the 97th may properly and successfully fulfill its primary mission: "To observe, record and report with deadly effect."

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33RD PURSUIT IN INTERCEPTION PROBLEMS

Some of the most interesting work at Langley Field at the 33rd Pursuit Squadron front is the interception problem. The Squadron usually assigns two or three officers to run the plotting board and the Flight Commander takes over the flying end. Zig-zagging courses of the "enemy" formation keeps the friendly Pursuiters on their toes and calls for accurate timing and exact navigation. Each mission usually results one hundred percent successful.

The mornings receive their debut with flight gunnery on tow targets at an altitude of 15,000 feet.

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HARMONIZATION FOR HIGHER SCORES
By 1st Lieut. Norman H. Ives, Air Corps

THE efficiency with which a Pursuit airplane can carry out its defensive or offensive mission is dependent mainly upon the operation and effective use of the fixed machine guns. Disregarding the mechanical and electrical difficulties encountered in gunnery, and assuming that the rate of fire synchronization, etc., are satisfactory, there is one major consideration which may mean the difference between highly successful accomplishment of a mission and failure: that vital factor may be best described as the ability of the pilot to hit the target.

Inasmuch as the ability of the pilot to hit the target does not depend solely on the individual's flying ability or the functioning of the armament equipment, it is important that all of the contributing factors be considered. Low scores are generally attributed to rough air, poor flying qualities of the airplane, erratic piloting, or just poor marksmanship. Actually, about eighty percent of the trouble may be traced very definitely to one cause: improper harmonization.

Merely mounting sights and guns on an airplane in such positions as will cause the trajectories of the bullets to intersect the line of sight at a given range is not sufficient harmonization to insure hitting the target consistently. Unless the pilot can hold the sights on the target long enough to fire an accurate, destructive burst, the results are erratic and considerably below the desired standards of gunnery efficiency.

The most important factor in harmonization, and the point that is most frequently overlooked, misunderstood or unknown, is this: It is impossible for a pilot to fly a straight, true course to the target, holding the sights on the target long enough to insure accurate, destructive fire, unless the sights are perfectly parallel with the flight line of the airplane.

As stated above, the necessarily steady, accurate approach does not depend solely on the flying ability or finesse of the pilot. The steadiest pilot cannot hold his sights on the target and fly a straight line if those sights indicate a line which the airplane cannot possibly make good, because of the design, rigging, or inherent flying qualities of the airplane.

Mounting the sights parallel with the flight line does not mean that the sights are parallel with the longitudinal axis of the airplane. The longitudinal axis and the flight line are seldom the same. The longitudinal axis remains constant, whereas the flight line of an airplane varies, in relation to the longitudinal axis, with an increase or decrease of speed, altitude and load. Therefore, it is necessary to select an airspeed and altitude, find the exact angle between the flight line and the leveling lugs of that airplane for the desired airspeed and altitude, and then align the sights accordingly.

The correct angle between the flight line and the leveling lugs for any airplane equipped with fixed machine guns may be obtained from the gun sighting chart prepared by the manufacturer and included in the airplane handbook.

The gun sighting charts are plotted to show the angle between the flight line, with full useful load less one-half the fuel load for all speeds within stalling and fifty percent greater than maximum level flight speed, and the line established by the leveling brackets or leveling datum for each 5,000 foot altitude. For example, a typical gun-sighting chart will show that at an airspeed of 150 miles per hour, at sea-level, the flight line will be three degrees above the line parallel to the leveling lugs. That is, the nose of the airplane will be three degrees above the line the airplane is actually flying. At a speed of 280 miles per hour, at the same altitude, the flight line of that airplane will be slightly below the line parallel to the leveling lugs. If the sights are aligned with the leveling lugs, it is easy to see that it is impossible to fly parallel to the line of sight except at the one speed and altitude at which the flight line and the longitudinal axis are the same.

If the line of sight and the flight line are not absolutely parallel, the pilot may get the sights on the target but cannot possibly hold them on the target because the airplane follows a line which may be several degrees above or below the line of sight. As the airplane approaches the target, the sights move up or down on the target, although the pilot does not vary the angle of approach. In order to return the sights to the target, the pilot must change the vertical angle of approach of the airplane. The new angle will permit the sights to remain on the target momentarily and then the angle must be again corrected to return the sights to the target. This results in a "dive and zoom" approach. Theoretically, the approach described is approximately the shape of a parabola. Actually, due to the pilot's efforts to make the corrections necessary to keep the sights on the target, the airplane "hunts" up and down on the parabolic course. The "dive and zoom," of course, is very shallow and hardly perceptible to onlookers and usually not of sufficient magnitude to be noticed by the pilot. However, that irregular approach is enough to account for the difference between expert gunnery and just average or poor marksmanship. A change of one degree in the angle of approach, at a range of 700 feet, will move the center of impact more than twelve feet.

It must also be remembered that in mounting the sights parallel with the flight line there must be no lateral divergence. This does not mean, for instance, that all C-4 sights will read "0". If the fuselage remained perfectly true, and the sight post mounting sockets were accurately aligned, then the sight would always read "0". Adjustments to right or left are usually necessary to bring the line of sight parallel with the flight line. By attaching strings of equal length (about 30 feet long) to the leading edges of the right and left wings, equal distances out from the center of the fuselage, and by bringing the free ends together in front of the airplane at the level of the sights, an accurate sighting point is provided for aligning the sights, laterally, parallel to the flight line. If the point at which the strings meet cannot be seen through the sights with the rear sight set at "0", then an adjustment is necessary. After accurately aligning the sights parallel to the flight line by the above method, the sight should never be moved from the flight line in order to intersect the line of fire at a given range or to move the point of impact in relation to the center of the target. Move the guns,- not the sight. The position of the guns cannot in any way affect the flying of the airplane. It is absolutely necessary that the strings used in establishing the point directly in front of the airplane be exactly the same length. Care must be exercised to prevent stretching one string more than the other, or an appreciable error may result.

The same principles and factors involved in harmonizing and using the C-4 sight apply to the N-2 optical sight. The actual procedure in aligning the N-2 sight varies slightly, but the results are the same, and it is just as important accurately to mount the sight so that the line of sight is perfectly parallel with the flight line of the airplane. If the sights and guns on all the airplanes in a squadron are harmonized properly, it will make no difference in a pilot's scores whether he flies his particular assigned airplane or some other airplane in the squadron. As long as the correct airspeed and altitude are maintained, a steady, true course can be flown, and the sights can be held on the target with comparative ease. In many Pursuit squadrons it is necessary for two or more pilots to use the same airplane for gunnery. If each pilot aligns the sights and guns in accordance with his own understanding of harmonization, the result will be an unnecessary waste of time and, in most cases, average or poor scores. Furthermore, unless the sights on all airplanes in an element or flight are correctly aligned parallel with the flight line, a close element or flight formation cannot be maintained while approaching and firing on a target. For instance, if the rear sight on the leading airplane is off-set to the left, that airplane will describe an approximate parabola to the right as long as the pilot sights on the target. If the rear sight on the airplane in number two position is off-set to the right, then that airplane will follow a parabolic curve to the left during the approach if the pilot attempts to hold the sights on the target. The result is that the wing men in a formation are forced to disregard their sights and fly for position on the leader. This accounts, to a great extent, for the inaccuracy of formation fire. The advantages of standardized, correct harmonization are obvious.

The question of whether to align the sights or the guns parallel with the flight line is still frequently discussed and argued among pilots. There are quite a few erroneously informed pilots who insist on moving the sight to harmonize with the guns and to change the center of impact on the target. Those are the pilots who complain about the flying qualities of the airplane, and find it necessary to develop bad habits of skidding or slipping in order to hold the sights on the target.

Any doubt regarding the aligning of the sights and guns in relation to the flight line may be easily and quickly dispelled by the following practical demonstration: Using an automobile or any vehicle to simulate an airplane, mount a C-4 sight parallel with the longitudinal axis and sight on an object about 100 yards distant. (If it is not practicable to mount a sight on the vehicle, a chalk line on the hood, the center hinge, or a mark on the windshield in line with the radiator ornament will suffice. Require the "pilot" to drive the car slowly to the "target," holding the sight steadily on the selected object. If the sight is absolutely parallel with the longitudinal axis of the vehicle, the resultant course to the "target" will be perfectly straight. If the wheel tracks or tire marks are not visible, the line of approach may be shown by fastening a stick or wire on the vehicle in such a manner that it will scratch or mark the surface over which the vehicle passes. Next, move the sight, line, or windshield marker so that the line of sight is at a slight angle to either side of the longitudinal axis of the vehicle and repeat the run. The "pilot" will be unable to hold the sight on the target without gradually swinging the vehicle to right or left. The approach, as marked or shown on the surface, will be a parabolic curve.

The above demonstration should prove conclusively that the line of sight and the flight line must be the same in order to hold the sights on a target and make a straight approach. Although this demonstration shows only the erratic approach due to lateral divergence of the sight from the flight line, it must be remembered that exactly the same principles and factors are involved in vertical divergence. Add the vertical and the lateral curves together and the answer is erratic, mediocre gunnery. Pilots cannot expect to make consistently high scores if their airplanes cannot be made to fly a steady, straight course to the target. Correct, careful harmonization will enable average aerial gunners to raise their scores considerably, and the experts will get more consistent results.

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NEW LARGE TOW TARGET

The development of a tow target, the effective area of which is 300 square feet - much larger than the Types A-5 or B-12 - has practically been completed at the Air Corps Materiel Division, Wright Field, Ohio. This type of target embodies a series of short sleeves with mouths radially mounted at the rear of a flat flag and arranged so that the target may be towed either in a horizontal or a vertical plane. Because of the greater area of this target, scores for more accurate firing data may be obtained and visibility at longer range is afforded.

For the purpose of determining whether or not this design was suited for aerial gunnery practice, the target was taken to Selfridge Field, Mt. Clemens, Mich., on November 2nd. Six practice flights by 1st Pursuit Group pilots over a two-hour towing period were accomplished and proved that the design with minor modifications would be entirely satisfactory. For use in connection with the target, a Type C-5 windlass of 7,000 ft. cable capacity was developed. This windlass is similar to the Type C-4 except that it is made larger to accommodate approximately twice the length of cable. An air-cooled brake drum and an integral electric motor for rewind of the cable have been incorporated to replace the impeller drive used on other windlasses.

Action has been initiated to procure four of these windlasses and a number of the new type targets for service test.

MONUMENT DEDICATED TO WAR-TIME FLYER

In the presence of approximately 1,000 statesmen, diplomats, government officials, Army and Navy officers, veterans, relatives and friends, a monument to the memory of Lieut. Norman Prince, World War flyer and organizer of the famous Lafayette Escadrille, was dedicated on Monday, December 6th, at the Washington Cathedral, Washington, D.C.

Fifteen members of the Norman Prince Post of the Veterans of Foreign Wars and an equal number of members of the Norman Prince Post of the American Legion came from Boston to constitute a guard of honor around the monument. Mayor Frederick W. Mansfield, of Boston, and Mrs. Mansfield, likewise attended, offering a wreath in tribute, in the name of their city, to "one who was her son."

The counselor of the French Embassy, Mr. Jules Henry, represented his country at the ceremonies in the absence from the city of the French Ambassador.

"It is a significant circumstance," said the Right Rev. James E. Freeman, Bishop of Washington, who conducted the rites, "that the first notable monument and memorial to be placed here is in honor of an American youth who made the supreme sacrifice not under his own colors but under the tricolor of France. He was a volunteer who died for a cause he loved."

General John J. Pershing, representing the armies of the United States, also praised Lieut. Prince as a chivalrous hero who gave up wealth and ease for martyrdom in the name of righteousness. The A.E.F. Commander was followed by Major General Adelbert de Chambrun, representative of the armies of France, who told of the hero's career as an organizer of the Lafayette Escadrille and declared that his name, held in grateful remembrance by the people of two nations, will be a "sentiment that always will keep us united."

Army Air Corps officers present at the ceremonies were Colonels Chalmers G. Hall, Frank P. Lahm, Lieut. Colonels Michael F. Davis, Arthur E. Easterbrook, and Major George L. Usher.

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A Pako Model G-37 photographic print dryer was recently delivered to the Materiel Division, Wright Field, from the Pako Corporation, Minneapolis, Minn. This dryer was procured for comparative tests with existing drying equipment, with the idea that it would lend itself to modifications and be suitable for use in the portable photographic laboratory. It has a capacity of approximately 300 8 by 10-inch prints per hour. The drying is accomplished by gas, and the prints are carried over the heated chamber by fabric belts.

AIR CORPS DEVELOPS HOMING INSTINCTS

By the Hamilton Field Correspondent

Each year Hamilton Field initiates a school in navigation with the intention of going the homing pigeon one better - that is, to go to a distant place as well as to return to the home port. At the beginning of the California winter when even the ducks ride the waves, all pilot personnel not already qualified in air navigation go to their classes to find out in practice why Columbus sailed west when he wanted to get east.

The course covers a period of sixty hours and includes the theory of dead reckoning and celestial navigation and actual air navigation problems. The first twenty hours are devoted to definitions, instruments, and map study. The four main map projections, Mercator, Gnomonic, Polyconic, and Lamber Conformal are analyzed and the advantage of each emphasized and sample charts of each type are constructed in the classroom. Each embryo navigator acquires complete familiarity with all navigation instruments and is required to calibrate each type.

Air speed calibration is accomplished by timing the flight between two points of known distance and checking the meter reading with the actual speed. Compasses are either swung on the ground over a large compass-base or by heading into the sun, and by determining the angle of the sun's shadow for that instant it is possible, with the aid of the modern developed gyroscope, to calibrate from any known direction to 180 degrees from that position.

Drift sights are calibrated with the aid of a surveyor's transit and plumb bobs. All this is accomplished so the modern airplane navigator can correct for instrument installation errors which are always present in any graduated recorder.

Dead reckoning navigation is the most commonly used method for keeping a log of where one is or will be, and is used by all vessels at sea during continued fogs and bad weather. This is the only system available, and many a ship's log will show positions at the end of a day as a Dead Reckoning position. It is simply using Speed times time elapsed to give distance and correcting this for wind and instrument errors. With present types of navigation instruments two readings of the amount of drifts of different directions will give the wind force and direction and the actual ground speed even though the airplane is two or three miles above the earth.

On completion of the preliminary forty hours of school in Dead Reckoning navigation, all students are required to navigate a number of missions over water where there are no known points to aid in determining where they are. Such missions are planned beyond the sight of land and the navigator's accuracy is computed by the arrival point on the coast.

As soon as a navigator can plot his position within one mile in a hundred miles and estimate his arrival at a point within one minute for each hour out, he is sufficiently familiar with air navigation to begin the problems confronting the Air Corps of patrolling and defending the coast.

As all the large vessels at sea send in weather reports every twelve hours with their positions, it is possible to use them as objectives in interception problems. This form of navigation requires the most accuracy and affords the very best type of training. Many an ocean traveler a day away from San Francisco could look up at a solitary Army airplane swooping down on the ship from the blue and have the comfortable feeling that he is nearing a safe and dependable port.

Celestial bodies, when visible, are available as another aid for the air navigator and can be made use of to determine one's exact position day or night by computation of their height and angle.

The most modern navigation aid, the radio direction finder, which, if developed to operate under severe electrical conditions, will greatly simplify navigation methods and insure accurate air navigation even in cloudy weather, when reference to celestial bodies for rectifying position is impossible.

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BT-9 AIRPLANES FOR LANGLEY FIELD

Four North American BT-9 airplanes were recently ferried to Langley Field, Va., from the factory at Inglewood, Calif. A small two-place, low wing monoplane with sliding covers over the cockpits, the BT-9 will fill a new need in the Second Bombardment Group, to which three have been assigned. They will be used as "couriers" - messenger and utility airplanes - for those numerous missions wherein the employment of the large Bombardment planes would not be economical. The fourth BT-9 will be assigned to the Eighth Pursuit Group, also as a "courier."

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The first of a series of nine high altitude type Douglas DC-3's was recently delivered to Pan American Airways at the Brownsville, Texas, base. The plane will form the primary step to getting into the sub-stratosphere, the final step being made with the 21-ton "Substratosphere Liners" now being built for the line by the Boeing Company.

AND I LEARNED ABOUT FLYING FROM THAT

In accordance with repeated requests in the News Letter for Army pilots to submit for publication unusual incidents connected with flying, from which certain lessons were learned and the narration of which would prove helpful to other pilots, an Air Corps pilot submitted a report of two such incidents which occurred several weeks ago, and which are given below, as follows:

After landing at Chanute Field following a cross-country flight from Offutt Field in an A-17A, I found that my brakes were locked. The plane slid along on the turf as if it were going to crack up, but it finally stopped right side up. I tried to taxi, but was unable to move. I then pressed the rudder pedals and heard the parking brake release. After that I taxied without difficulty. Inasmuch as I did not take off with the parking brakes lock on and distinctly remembered having released it, I believe that the fact that I spent ten minutes blind in one of the most violent storms which I have ever experienced - literally being shaken almost to pieces - must have put the parking brakes on in some unexplained manner.

Corroborating this is the fact that the flap lever, although up when I took off, was down, and when I put my landing gear down the flaps went down. I never lower the flaps with power, but utilize the hand control. I had an indicated speed of about 170 miles when I put the wheels down. The flaps instantly went down full, and why they did not rip off is more than I can understand.

On a flight from Washington to Chanute Field in a B-18, the hydraulic pressure gauge blew out, rendering inoperative the automatic pilot, the landing gear, the flaps and the brakes. Two-thirds of the oil leaked out of the hydraulic tank, still leaving me enough to put the landing gear down with the emergency hand pump. I landed the ship at Chanute Field without difficulty, without brakes or flaps.

The following conclusions are reached:

(1) The minute I noticed the pressure going down in the hydraulic system I should have put my wheels down. Possibly I could still have gotten them down with the remaining pressure, thus leaving one-third of the oil for use on flaps and brakes.

(2) Had the break occurred in the bomb-bay line, by opening the bomb-bay doors I might have closed this line and rendered the system operative. In this instance it did not happen to be the case.

(3) Before using the auxiliary hand pump, I tried to snap the wheels down through violent use of the elevator. I did this at 110 miles per hour. I believe I would have had a greater chance of success at a higher speed - say 170 or 180 miles per hour.

(4) The turf at Chanute Field was soft, due to a recent rain. This slowed up the roll of the ship considerably and I didn't roll more than half a mile. Had I landed on a hard surface runway I probably would have rolled the entire length and crashed into something. Consequently, if I had it to do over again, I would make sure to land on a turf field.

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SOUTH AMERICAN PILOTS VISIT BOLLING FIELD

A group of six airplanes, constituting a "Good Will" flight of the Pan-American Union, arrived at Bolling Field on November 24th, the visiting pilots being on a tour of a number of American cities. The flight consisted of six Taylor "Cubs," piloted by representatives of several South American countries, and wad led by Captain Laborde.

The flight departed from Bolling Field on November 25th.

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COMMEMORATION OF KITTY HAWK FLIGHT

In commemoration of the first flight of the Wright Brothers at Kitty Hawk, North Carolina, December 17, 1903, all Army Air Corps stations have been directed to place all available airplanes in the air on December 17th at the hour of the first flight, weather permitting.

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HIGH TENSION IGNITION CABLE

The Air Corps Materiel Division at Wright Field, Dayton, Ohio, announces that, as a result of considerable research, a new type of high tension ignition cable has been developed which is at present undergoing service test. The new type of cable has been reduced in outside diameter from the present standard of .285 inch to .200 inch. This was accomplished by utilizing a steel stranded conductor and a greatly improved rubber insulating compound. The new type of cable has the advantage of requiring a smaller shielding manifold, with a consequent saving in weight and space.

Laboratory tests of the new type of cable have conclusively shown that it meets all the performance requirements of the present ignition cable specifications. In addition, it is definitely superior to the standard cable which was procured approximately two years ago.

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Nearly every Army pilot has had one or more unusual experiences in flying which taught him valuable lessons. You can help others by telling about them in the News Letter.

WHAT TO DO WHEN THINGS GO WRONG

By the Mitchel Field Correspondent

The following was submitted as a suggestion in accordance with a recent order emanating from GHQ, which requires Check Lists for co-pilots and passengers in all types of airplanes. The O.I.C. was attempting to make up such a Check List and one of the enlisted men of the O-46 flight presented him with this:

INSTRUCTIONS TO ALL PASSENGERS IN O-46 AIRPLANES

1. In case of engine failure or other minor trouble such as loss of wing or wings, loss of propeller, fire, etc., the following procedure will be carried out:

a. Remove all loose radio equipment and tools.

b. Ask Pilot for Form 1 and fill out same.

c. Send radiogram to Corps Area Headquarters requesting permission to make emergency parachute jump.

d. Check altitude and position, being sure to include this information in the above mentioned radiogram.

e. Make list of best telephone numbers in the vicinity.

f. Notify Pilot that you are ready to jump.

g. JUMP.

2. After leaving ship proceed as follows:

a. Count ten (it may be necessary for some passengers to carry slide rule to accomplish this. If necessary it will be included in the bundle of spare radio parts and tools carried).

b. Pull the rip cord. This is quite essential.

c. The usual procedure here is for the parachute to open.

d. If step b or c, or both, are omitted, immediately upon landing the passenger will proceed to the Post Operations Office, secure and fill in Form No. 1311 (Request for Sympathy) and mail same to the Chief of Chaplains, U.S. Army, Washington, D.C. This will be accompanied by an Unsatisfactory Report on the parachute used.

e. The Form 1, radio, spare parts, tools, etc., will always be carried by the passenger on his jump.

f. In some cases the Booklet "How to Swim in Three Easy Lessons" will be found very helpful.

g. In other cases, the passenger has found that the Booklet "How to Fly in Nine Easy Lessons" is sometimes of value, but it has been found by the Trial and Error Method that the usual passenger never gets beyond Lesson Three before the ship comes in somewhat violent contact with the ground or some other obstacle which sometimes has disastrous results.

5. One of the most important things to remember is that when passenger, having carried out the above instructions, proceeds to his barracks or place of residence and he observes a group of his friends he will practice repeating "Well, boys, we were flying about ......" This practice is very necessary, as after the first week or two after his jump the story will be no longer than that, or the Medical Officer will ask him why he is talking to himself.

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NAVIGATION TRAINING AT LANGLEY FIELD

Continuing the program of training co-pilots and bombers of B-17 crews in celestial and dead reckoning navigation, Captain A.Y. Smith, Air Corps, held a class on November 18th, with the following officers in attendance: Lieuts. T.L. Mosley, I.R. Selby, J.B. Stanley, R.S. Freeman, C.J. Cochrane and J.B. Montgomery.

Two hours were devoted to a careful explanation of the Ageton method of solving triangles. Following this lecture, a problem was worked using assumed figures for the time and sextant readings. After all of the men become sufficiently proficient to aid the regular navigator in his celestial work, Captain Smith expects to take up dead reckoning navigation with a view to training his pupils so that on long flights they will be able to relieve the regular navigator.

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COOPERATION WITH CHEMICAL WARFARE SCHOOL

The 37th Attack Squadron, Langley Field Va., flew a cooperative mission with the Chemical Warfare School at Edgewood Arsenal, Md., on November 18th. The operations consisted of two main chemical missions. The first was a smoke screen laid by five airplanes. The second mission consisted of an attack by all five airplanes on silhouette targets with four forward machine guns, followed by a gas attack of tear gas and dye on the students who were marching along a road.

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With 44 world records to the credit of its pilots, Italy, as of July 1, 1937, held most of the official aviation marks in the categories recognized by the Federation Aeronautique Internationale. The United States was credited with 39 major records, France with 22, Russia with 15, Great Britain with four, and Germany, Japan, Czechoslovakia and Poland with one world mark each.

HISTORY OF THE SECOND BOMBARDMENT GROUP

The Second Bombardment Group, the home station of which is at Langley Field, Va., was originally the First Day Bombardment Group, First Pursuit Wing, when it was organized at Moulon, France, September 10, 1918. The Group then consisted of the 96th, 20th and 11th Day Bombardment Squadrons, the 464th Construction Squadron and the 12th Photo Section. Of the Bombardment Squadrons, the 96th was the veteran organization, having been engaged in active operations on the front since May, 1918. It was the pioneer bombing squadron of the American Air Service, and its history is crowded with brave and thrilling exploits. Organized at Kelly Field, Texas, August 20, 1917, this Squadron had no definite idea of what lay in store for it, as was true of all other infant organizations of the rapidly growing army. It was not known whether it would be among the fortunate units to be sent across the water for immediate service in the field or whether it would be retained for equally important but less stirring duties at some home flying field.

On October 9, 1918, the Squadron was ordered to Mineola, L.I., New York, to be outfitted for overseas service. Sailing from New York on October 27th, it arrived at Liverpool, England, November 10th; moved to Southampton, and shortly afterwards departed for France, with station at the 7th Aviation Instruction Center, Clermont-Ferrand, Puy-de-Dome. Here the organization of the Squadron was completed and the mechanics given a course of training on the Breguet Day Bombardment plane and on the Renault motor at the nearby Michelin factory where the planes were made. This training later proved invaluable when the Squadron was sent to the front. On May 18th, the Squadron was sent to Amanty Field, near Gondrecourt, and became an established bombing unit in active service against the enemy. The flying equipment consisted of ten old instruction planes, type Breguet 14 B 2, with 300 horsepower, Type 12 F.E.V. Renault motors, which had been transferred from Clermont-Ferrand.

The first important bombing mission took place late in the afternoon of June 12th, when a flight of eight planes took off to bomb Dommary-Baroncour. The Squadron was practically without precedent for guidance, as it was isolated from other flying squadrons and had only two pilots on the rolls who had ever crossed the lines. The Squadron's baptism of enemy aircraft fire was received over Ftain, and the "Archies" were particularly active and accurate over the objective. Nevertheless, good hits were scored by the entire flight. The formation was attacked on the return flight by two enemy scouts and one biplace fighter. The pilots closed and held a tight formation, however, and the observers were able to beat off the attack. One place received two explosive bullets in the engine, but was able to reach the airdrome. Three planes were forced down with empty tanks, but all landed safely. Such was the unqualified success of the First American Bombing Raid.

Raids were scheduled daily, when weather permitted, until the middle of July, when the Squadron, through losses over the lines, was reduced to two planes. It was several weeks before new equipment and personnel arrived. In all, the Squadron was engaged in operations in the Toul Sector, at St. Mihiel, and the Meuse-Argonne, first and second offensives. It made nearly fifty bombing raids into enemy territory, destroying a great amount of property and gathering much valuable information. Participating in 19 combats, it was officially credited with the destruction of 14 enemy airplanes. The Squadron suffered 41 casualties, consisting of 12 killed, 12 wounded, 15 taken prisoners and 2 missing. During the month of August, the 96th operated continuously, with one to three raids a day, whenever it was at all possible to get over the lines, with only a few minor casualties. In September, however, the casualties it suffered were exceeded by no other squadron at the front. The last raid of the Squadron proved to be the hottest of its many encounters with enemy airplanes. A formation of five planes bombing Montmedy, after making some wonderful hits, was attacked by 15 enemy airplanes in a battle which lasted 20 minutes. Due to the expert leadership of the flight commander and the skillful flying of the remainder of the formation, the enemy was not once afforded a steady target. Two enemy planes were brought down, one in flames. One of our observers was shot through both hands and one plane was shot up so badly that it was forced to land at a French airdrome.

On September 18, 1918, the 166th Bombardment Squadron joined the Group, completing its organization. Little attention had been paid to American Bombardment planes up to this time. But immediately upon the advent of the First Day Bombardment Group, the Germans moved several of their crack circuses down to oppose them. That the heavy odds of the enemy were met successfully is recorded in the following citations accorded the Group:

"COMMENDATION OF WORK OF FIRST DAY BOMBARDMENT GROUP.

Headquarters First Army, Air Service
September 19, 1918.

"1. The work of the 1st Day Bombardment Group during the battle of St. Mihiel, and in the operations after it, has been such as to bring out the praise and appreciation of all the troops of the Allied Service participating in the operations. This Group, under most difficult conditions, with new equipment, pilots and observers, who had recently come up on the front, has shown a devotion to duty and initiative which has not been exceeded by any troops on the front.

"2. The work of the 1st Bombardment Group has materially aided in hindering hostile concentration troops, troop movement along the roads, and in sweeping the enemy back, thereby making lighter the work of our own Pursuit Aviation along the immediate front.

"3. I desire that all members of the Group be informed of the high regard in which their work is held throughout the Army.

(s) Wm. Mitchell,
Colonel, A.S., First
Army."

TELEGRAM

"HEADQUARTERS A.E.F.
Chief of Air Service

"First Day Bombardment Group -

"Excellent work done by the officers and men of your Group during the recent offensive deserves and has received hearty commendation. Congratulations to you and your command on the record you have made for yourselves and for the Air Service. It is good to know that we can rely upon you to keep up this fine work which counts for so much in bringing about the results desired.

(s) General Patrick."

The 20th Day Bombardment Squadron, which had joined the 96th at Amanty on September 7th, as a step in the process of organizing the Bombardment Group, started operations September 12th by conducting several Army reconnaissance missions with the opening of the St. Mihiel offensive. In was on this day that the Squadron suffered its first casualty. The 20th was the first squadron of American built planes to drop bombs over the enemy lines. On September 14th, formations from the 20th, 11th and 96th Squadrons conducted raids over the enemy lines, the first effort of the Group. The following day, however, proved most disastrous to the Group. A formation of six planes from the 20th Squadron left to bomb the railroad yards at Conflans. Due to the excessive strain put upon the planes on the first day of the offensive, it was necessary for all save the leader to turn back before the lines were reached. Although knowing the almost insuperable odds of a single Bombing plane crossing the lines, a try was made for the objective. Four Fokkers were met and driven off in the dash for the railroad center. The bombs were dropped on the objective. Three more planes were met and driven off on the return to our lines, and the lone plane, riddled with enemy bullets, finally reached its field. On that same day, out of a formation of six planes from the 11th Squadron, only one staggered back to its home field and it was in a riddled condition.

Such is the story of the Group for each of the squadrons up to the end of operations. On October 18th, the 166th Squadron, now the 49th Squadron, started on its initial raid on Buzancy with 13 planes. Eight planes reached the objective and dropped 800 kilos of bombs. The formation was attacked by 20 Fokkers and Pfalz, and in the course of the combat two of its planes were crippled but landed behind our lines. One enemy plane was destroyed. In less than one month of operation, the 166th had a record of conducting 12 successful raids, dropping 10,200 kilos of bombs, destroying six enemy airplanes with a loss of one observer killed, two observers and one pilot wounded and not one plane lost in enemy territory. After the Armistice, the Squadron was moved with the Army of Occupation to Germany, with station at Treves, where it remained until its return to the United States in April, 1919.

After the Armistice, the remainder of the Group received notice of disbandment on December 12, 1918. It arrived in the United States in February, 1919, and was demobilized at Mitchel Field, N.Y. The Group was reorganized at Ellington Field, Texas, in August, 1919, with the 11th, 96th and 20th Squadrons, the 464th Construction Squadron and the 2nd Photo Section. The 166th Squadron was stationed at this time at Aberdeen Proving Ground, Md. After its reorganization, the Group was distributed along various points on the Mexican border, and in the fall of 1920 returned to Kelly Field, where it was joined by the 166th Squadron. The designation of the Group was changed from the 1st Day Bombardment Group to the 2nd Group (Bombardment) in April, 1921, and in January, 1923, it was redesignated the 2nd Bombardment Group. In the summer of 1921, flights of each of the Bombardment squadrons were temporarily transferred to Langley Field, Va., to participate in the bombing of the German battleships off the Virginia Capes. Returning to Kelly Field in the latter part of September, they resumed their duties until the entire Group was transferred to Langley Field in June, 1922. One month later, the 49th Squadron, formerly the 166th, was detached from the Group and stationed at Aberdeen, Maryland.

Since 1922, the Group has participated in the bombing of scrapped American battleships, the Pee Dee River bridge in

(Continued on page 13).

NEW TYPE OF AIRPLANE FOR HAMILTON FIELD

Hamilton Field, San Rafael, Calif., recently received a new type of airplane on an Army order designed to further increase the efficiency of the GHQ Air Force.

Ever since the advent of the first long-range Bombardment type airplane, the Army has been pinched by its need for a general utility plane to accompany its flying armada, fulfilling such requirements as navigability over land or sea in any weather conditions, with sufficient range, speed and payload to carry the necessities for the servicing of the strictly military airplanes.

This new amphibian - now designated by the Army as the Y1OA-8 - is eminently adapted to fill this need. Built by Sikorsky, it is very similar to the commercial "Baby Clippers" - the Sikorsky S43 - which is now in extensive use by Pan American Airways and other lines in Hawaii, the Philippines, and South America. It is of all-metal construction, but with fabric covered control surfaces, painted in the familiar Army blue and yellow. Its two 800 horsepower Pratt & Whitney "Hornet" geared radial air-cooled engines cleave the air in excess of 190 miles per hour. This airplane carries eight passengers, or a corresponding amount of freight, and a crew of three - pilot, co-pilot and a radio operator who uses the very latest type of aeronautical radio equipment. It is capable of remaining aloft for eight hours. In spite of its great size, this airplane held at one time the world's altitude record for amphibians.

To ease the labor of maintenance and flying, this new amphibian carries innumerable labor-saving improvements, including automatic valve lubrication, automatic mixture control, and complete facilities for the comfort of the crew and passengers so that they may remain in the air for lengthy periods. To obtain the utmost efficiency from its powerful engines, constant speed propellers are included in its design.

This airplane is the first of an order of five to be delivered to the Army. Preparatory to being placed in actual service for navigation training work, as a rescue ship for fighting airplanes forced down at sea, and for general utility work with the new Douglas B-18 Bombers, it is undergoing a series of ground inspections and tests at Hamilton Field, and will shortly become another cog in the GHQ Air Force defense machine.

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Effective December 1, 1937, the following named Air Corps officers were given temporary promotions to the grades indicated: Lieut. Colonel Roy M. Jones to Colonel, Major Ira C. Eaker to Lieut. Colonel, and Captain Pardoe Martin to Major.

NEW CLASS AT SCHOOL OF AVIATION MEDICINE

Another routine course of instruction to qualify medical officers for duty as Flight Surgeons was commenced at the School of Aviation Medicine, Randolph Field, Texas, on December 1, 1937, and will continue for four months. Student officers enrolled for this course are - Captains Joseph A. Baird, Langley Field, Va.; Jay F. Gamel, Randolph Field, Tex.; Reinhardt L. Schmidtke, Fort Sill, Okla.; William D. Willis, Fort Sam Houston, Texas; 1st Lieuts. William C. Harrison, Fort Worden, Wash., and Edward Sigerfoos, Fort Sam Houston, Texas, all members of the Medical Corps, Regular Army, and Major Julio Cesar Aguilera, Medical Corps, Mexican Army, Mexico City.

Two basic courses are conducted annually, starting July 15th and December 1st of each calendar year.

In addition to the resident courses, the School conducts throughout the year extension (correspondence) courses of considerable magnitude. The School of Aviation Medicine is an activity of the Air Corps Training Center.

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The Second Bombardment Group

(Continued from Page 12).

1927; the mass formation flight to California in 41 hours in 1928; the Air Corps Maneuvers at Dayton, Ohio, in 1929; West Coast Maneuvers in 1930 and 1933; East Coast Maneuvers in 1931; the Air Mail in 1934, and the Second Army Maneuvers in 1936.

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REAL WINTER AT SELFRIDGE FIELD

Calling all C.W.E.T. Pilots. It is presumed the Selfridge Field Correspondent has reference to the Cold Weather Equipment Test, for he goes on to say:

"If you birds who were hanging around here last February in the hope (?) of encountering some honest winter weather will drop up this way now, I think we've got something here.... For nearly a week the mercury has been hanging between six and fifteen Fahrenheit, and the field is covered with enough ice to gladden the heart of a polar bear.

"You may remember that the Cold Weather Equipment Test Group arrived here at Selfridge Field last February 2nd, and after waiting a month for some sign of winter, they got out their straw hats and went home mad.... Fifteen minutes after the last ship departed.... it snowed. (Honest it did)."

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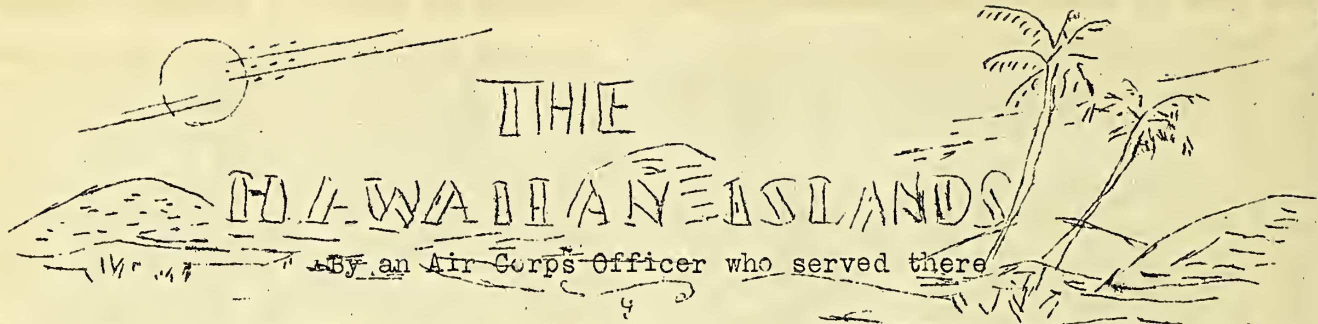
We are glad to hear from Selfridge Field again, and it is hoped to hear from this northern air base regularly from now on.



THE HAWAIIAN ISLANDS

By an Air Corps Officer who served there

A few months after our arrival in the Hawaiian Territory, we were delighted to receive information that we were included among the personnel to make a flight to Kauai (pronounced "cow-eye"). This is the most northwesterly of the eight islands in the Hawaiian Group and is situated approximately one hundred miles from Oahu, with no intervening land. Owing to its relative non-importance from a military standpoint, comparatively few flights of military aircraft are sent to this Island.

From Luke Field we crossed the Island of Oahu, over Pearl Harbor, past Wheeler Field and Schofield Barracks and Kaena Point, the northwestern tip of Oahu, which extends to a needle-like submerged point, distinctly visible from the air on account of the wonderfully clear water. Our trip from Luke Field carried us between the two mountain ranges of Oahu, the densely wooded Koolau Range on the windward side and the more or less barren Waianae Range on the "Kona" or leeward side. We were impressed by the natural bulwarks presented by these two towering walls which so obviously simplify any plans for the military defense of this important island.

Upon arriving at Kauai, we proceeded to circle the island. The first scenes which appeared were rather disappointing in that they duplicated those to which we had become accustomed in Oahu, but we were surprised and delighted upon viewing the terrain on the western side. The famous rock cliffs of Northwestern Kauai, never so perfectly seen as from the air, are sufficiently artistic to constitute a full payment for the efforts expended in making the flight, and we still wonder how nature contrived to carve the solid rock as deeply as it has without the aid of waterfalls.

After leaving the rock cliffs and continuing in a southwesterly direction, we noticed a large sandy area, which we later learned constitutes the "barking sands" made famous by the intrepid Captain Kingsford-Smith, and which he used as a point of departure from the Hawaiian Islands on his universally acclaimed trip to Australia. We have been told that one has a peculiar sensation when he first walks on these sands and hears the canine-like yelps which occur at each step.

Glancing out to sea we could discern the outline of nearby "Niihau," a small island inhabited by about twenty persons.

From the "barking sands" we headed inland and crossed Waimea Canyon. We had to rub our eyes and pinch ourselves to make sure we were not over the Grand Canyon of the Colorado in Arizona, so striking is the similarity. Actually the Waimea Canyon is shorter, shallower and narrower than its illustrious counterpart, but the formations and proportions of the two are peculiarly alike.

The small landing field at Hanapepe afforded us a harbor, and the generosity and cordiality of the white inhabitants of Kauai are still remembered as one of the high lights of our Hawaiian sojourn.

Not long after our trip to Kauai, we were again fortunate to be included in a flight to the "big island." This flight took us over or near all of the remaining islands of the group.

After leaving Diamond Head, we pointed our planes toward Molokai, thirty miles away. Upon approaching the shore, the course was altered in such manner as to skirt the southwestern side of the island. During this portion of the flight, we glanced occasionally to our right to obtain an idea of the terrain of the Island of "Lanai," the "Pineapple Kingdom" of the Dole Company. The northwestern plateau of "Molokai" is also extensively devoted to the raising of this fruit, and the broad acres of this island deliver their product to the Libby Company. The southeastern end of Molokai, which is a slender island, is quite mountainous, and the extreme eastern portion is very beautiful, although that sight was denied us on this flight.

A short water "hop" brought us to Maui (Mow-ē), the "valley isle." The extreme northwestern slopes, which we first approached, presented the familiar patterns of the pineapple fields, although the areas devoted to this form of agriculture are quite limited, due to the sudden rise of the terrain into the formation of the first of a series of the most beautiful green hills, separated by valleys of similar verdure, which it has ever been our fortune to observe. These hills are very precipitous, and their height of some two thousand feet entitles them to the more dignified name of mountains, but compared with the giants viewed during the remainder of the flight the impression left us of these slopes, without detracting from the beauty of the recollection, is that they are large hills.

The last hill terminates as suddenly as the first appeared, and the long, fairly level, valley portion of Central Maui passed to our left. On our right lay the low, uninhabited and barren island of "Kahoolawe." (We could give you the official pronounciation of this name, but everyone who has been to Hawaii has his or her own ideas, and we do not desire their ridicule, even though we are right). Although we characterize this island as barren, due to lack of any considerable vegetation, the redness of the soil indicates that its nature is similar to that devoted to the culture of pineapples on the other islands. But poor little Kahoolawe lies "Kona" of the towering crater of "Haleakala" on the southeastern end of Maui and, therefore, is cheated of the majority of rainfall.

Mt. Haleakala has an irregular crest whose summit is approximately ten thousand feet above the sea, to the edge of which its lower slopes extend in three directions. Probably the size of this unquestionable "mountain" is responsible for our belittling conception of the proper term for the hills at the other end of the "valley isle."

The entire southeastern tip of Maui has been constituted into a National Park, partially due, no doubt, to the fact that the contour gradient is so great as to render farming impracticable. To the tourist who takes the trouble to ascend to the summit of the mountain, a crater of tremendous depth appears, to the floor of which a zigzag footpath descends. Although this trip was not essayed by us, we have resolved that it will be made at some time during our next tour in the territory.

It is the crater of Haleakala itself that harbors the only known living specimens of the "Silver Sword," a plant similar to the "Spanish Dagger," or "Bayonet" cactus, but whose foliage is resplendently brilliant and whitish silver in color. Referring back to an earlier article in the News Letter, in which the origin of all plant life in the Hawaiian Islands was said to be non-indigenous, the phenomenon of this plant must be due entirely to environment.

The stretch of water over which we flew, extending from the northwestern end of Molokai to the southeastern tip of Maui, and lying between these islands and those of Lanai and Kahoolawe, is named

For some time before we reached Mt. Haleakala we had stolen glimpses of the "big island" directly ahead. A 30-mile stretch of extremely rough water, thoroughly infested with a particularly lively variety of sharks, separates Maui from Upolu Point, the closest tip of "Hawaii." To our delight, we followed the leader in single file to a landing on a small field maintained by the Army on this point.

Our craft were not the modern, sleek, metal speedsters, but rather the old Martin "NBS-1's," over the passing of which many old time "bombardiers" still raise a few figurative tears. It is believed that the last of the NBS-1's were those we flew in Hawaii, and sad was the day when good old "66," the "sweetest" of all, was burned on the junk pile - a most inappropriate ending for a dependable old friend - but sadder still the day when number "50," the last of its type, met a similar fate. At any rate, we were ready for a rest and not at all disappointed to learn that we were to spend the night at Upolu Point.

The next morning we were up bright and early, taking off as soon as possible for the flight around the "big island." Since the distance is in the neighborhood of four hundred miles, only the blase pilots of present-day airplanes may well wonder at the spirit of adventure attending this trip, either forgetting or never having known the esprit de corps required when we claimed a cruising speed of from ninety to one hundred miles per hour for our trusted eighty mile planes.

The flight itself was extremely interesting from the scenic point of view, but even more valuable to each of us as a part of our military education, especially from the Air Corps point of view. Unfortunately, the military knowledge gained cannot properly be published in the News Letter.

The Island was circled to the left, taking us by the Kohala Mountains, about 5,000 feet in height; Mt. Hualalai, an old crater of 8,000 feet; the dense, tropical foliage of the "Kona" coast, where Hawaiian coffee is raised; past mighty Mauna Loa; over the "Kona" coast lava flows, one atop the other, each varying in color from the other; around South Cape; across the southeastern tip of the Island and the "Volcano Region," including Kilauea Crater, with its constant steam; across the Kau desert, where a forced landing could not be made with any hope of salvaging any part of a plane and even a parachute jump would be exceedingly hazardous; skipping the "Puna Coast" around whose scenery was laid the stage production "The Bird of Paradise" of years ago; over the City of Hilo; its airport, which we could not use for landing our Martins due to lack of brakes; on past the cane fields; past lofty Mauna Kea, the highest peak of all; past the unusual geological formations comprising the "Hamakua Coast;" and so

(Continued on Page 17).

OBITUARIES

Within the past few weeks the Air Corps lost several of its personnel through airplane accidents and one through natural causes, thus again confirming that oft repeated adage to the effect that misfortunes never come singly.

Major Alfred E. Waller, of Langley Field, Va., lost his life on December 11th, when the plane he was piloting caught fire in flight and crashed when he attempted to make a landing. He was removed from the burning wreckage before his clothing caught fire. Sergeant John Johnson, who accompanied him on the ill-fated flight, suffered contusion and minor injuries when he was thrown clear of the airplane.

Major Odas Moon died on November 19th at the Hotel Chamberlain, Old Point Comfort, Va. He was awaiting retirement from active service, effective December 31st. Major Moon had been in ill health for some time.

Second Lieut. Edward Lawrence Parsons Burke was killed near Kelly Field, Texas, on December 9th while engaged in a weather flight.

Second Lieut. Charles William Field, Air Reserve, and his passenger, Private George W. Bolton, Jr., lost their lives on December 1st, about 2½ miles south east of Avery, Texas, when the A-17A Attack plane piloted by Lieut. Field went into a tail spin and crashed.

Major Waller was born at Morganfield, Ky., February 20, 1894. He attended Vanderbilt University for three years. Following his enlistment on December 8, 1917, in the Aviation Section, Signal Corps, he graduated from the ground course at the School of Military Aeronautics, Austin, Texas, February 23, 1918. After several weeks' duty at the Aviation Concentration Camp at Camp Dick, Dallas, Texas, he was ordered to Park Field, Tenn., for flying training. Passing his tests as a Reserve Military Aviator, he was commissioned a second lieutenant in the Aviation Section, Signal Corps, on May 14, 1918.

Following attendance at the Armament School at Wilbur Wright Field, Fairfield, Ohio, from July 3 to 24, 1918, he was transferred to Gerstner Field, Lake Charles, La., for advanced training as a Pursuit pilot.

Due to the destruction of Gerstner Field as the result of a hurricane, Major Waller was transferred to Rockwell Field, Coronado, Calif., to continue his Pursuit training, completing same on October 26, 1918. He remained at Rockwell Field, serving as Supply Officer, until August 14, 1919, when he was transferred to March Field, Riverside, Calif., where he served as a flying instructor among other duties.

Following his appointment as a second lieutenant in the Air Service, Regular Army, July 1, 1920, he was transferred to Mather Field, Sacramento, Calif., where he served as Post Exchange Officer. In June, 1922, he was assigned to duty at Crissy Field, Presidio of San Francisco, Calif., and in the following September he was assigned to foreign service with the 3rd Pursuit Squadron at Clark Field, Philippine Islands.

From August, 1924, to May, 1927, Major Waller was stationed at the Air Corps Primary Flying School at Brooks Field, San Antonio, Texas, serving at various times as Commanding Officer of the 52nd School Squadron; Engineering Officer, 51st Squadron; Flying Instructor and Director of Flying Instruction.

After attending the Air Corps Tactical School at Maxwell Field, Ala., from August, 1931, to June, 1932, Major Waller, upon graduation, was assigned to Langley Field, Va., serving as Commanding Officer of the 35th Pursuit Squadron and later as Operations Officer of the 8th Pursuit Group.

In the operation of the Air Mail by the Army Air Corps, Major Waller was placed in charge of Section II of the Eastern Zone, comprising the route from Chicago, Ill., to Jacksonville, Fla., and the Richmond, Va., to New Orleans, La., Section of the Newark, N.J. to New Orleans route, with headquarters at Candler Field, Atlanta, Ga.

Major Waller performed a varied assortment of duties at Langley Field, but during most of his over four year tour at this field he commanded the 35th Pursuit Squadron. For brief periods he served as Supply Officer of the Squadron; as Operations Officer of the 8th Pursuit Group; as Commanding Officer of the 33rd Pursuit Squadron and as Executive and Operations Officer of the Second Wing.

After graduating from the one-year course at the Command and General Staff School, Fort Leavenworth, Kansas, in June, 1937, Major Waller returned to Langley Field for duty. His total flying time exceeded 3600 hours.

Lieut. Burke, a native of the State of Montana, where he was born October 25, 1912, and whose home was in Helena, graduated from the U.S. Military Academy, West Point, N.Y., June 12, 1936, when he was commissioned a second lieutenant and assigned to the Infantry. Ordered, at his own request, to the Air Corps Training Center for flying training, he graduated from the Primary Flying School at Randolph Field, Texas, June 23, 1937, and from the Advanced Flying School, Kelly Field, Texas, on October 6, 1937, on which date he was rated as "Airplane Pilot." He was slated for duty in the Philippines. His untimely death shortly after finishing his flying training and when he was on the threshold of his new career in the Air Corps, one which from all indications he was looking forward to with a great deal of interest and enthusiasm, is sad to contemplate.

Like Lieut. Burke, Lieut. Charles William Field graduated from the Advanced Flying School at Kelly Field, Texas, on October 6, 1937. He was commissioned on that date as a second lieutenant in the Air Reserve and assigned to active duty with the 13th Attack Squadron at Barksdale Field, La. Lieut. Field was 23 years of age and his home was at Rocky Face, Ga.

Private Bolton, who enlisted in the Air Corps on February 3, 1937, and whose home was at Beinville, La., was born on September 10,

1918. He was assigned to duty at Barksdale Field, La., with Base Headquarters and 6th Air Base Squadron.

Major Moon, a World War veteran, who was 45 years of age, enlisted in the Aviation Section, Signal Corps, in October, 1917. A sketch of his military career was published in the issue of the News Letter of October 1, 1937, in connection with the announcement of his retirement from active service. Major Moon was particularly well versed in Bombardment Aviation.

The Air Corps deplores greatly the loss of these men who died in the service of their country and extends its deepest sympathies to the bereaved relatives and friends.

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THE HAWAIIAN ISLANDS (Continued from Page 15).

back to Upolu Point and a well earned and much needed rest.

The return flight to Luke Field was made the next day, following the same route, in reverse order, as that employed on the outward journey. We arrived, dirty and sun-burned, but possessing sufficient information to entertain our families and friends for several days.

There is so much interesting detail concerning the Island of Hawaii, which was but lightly mentioned in this article, that another article will follow, devoted more or less exclusively to an expository treatment of some of the outstanding points.

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RETIREMENT OF MASTER SERGEANT DONOHOE

Special Orders of the War Department recently issued announced the retirement from active service on November 30, 1937, of Master Sergeant Michael J. Donohoe, 8th Attack Squadron, Barksdale Field, La.

A few Air Corps officers now in the service, but many middle-aged men in civil life, upon hearing this announcement, would harken back to World War days when they were cadets attending the Ground Officers Training School at Kelly Field, Texas, and their memories would drift to that colorful figure of the Ground School Drillmaster, Sergeant Michael J. Donohoe, who caused them many an anxious moment during drill periods, whose ready wit and humorous sallies made them forget for a time the hard grind they were undergoing in order to secure that much coveted commission in the Aviation Section, Signal Corps, and whose kindly interest in their welfare gained for him their admiration and respect.

New classes for the G.O.T.S. were formed each week, the length of the course being some ten weeks. The "old-timers" - those who had had an opportunity to become pretty well acquainted with Sergeant Donohoe and to learn that his "hard-boiled" characteristics were limited to the drill field only, took keen delight in telling the new arrivals in considerable detail the extremely tough time in store for them with the Drillmaster.

Just a few words with the kindly Sergeant, without even knowing his name, removed all doubt regarding his native land, for if there was anyone who more adequately fitted one's conception of a typical representative of the Emerald Isle, the writer has not known such.

It was customary for each class of the Ground School at graduation time to hold a banquet at one of the San Antonio hotels, and Sergeant Donohoe was invariably the guest of honor. Also, he was remembered by each class, as evidenced by the many mementoes at his quarters at Kelly Field.

After the first few weeks, when the rookie students had gotten the hang of marching straight and executing the various formations, the Sergeant introduced a new figure in the set-up, an assistant instructor, equipped with a notebook and pencil. Said assistant instructor's principal duty was to jot down names. That dreaded notebook became the bane of every cadet's existence, but not until graduation time did it leak out that that the little book was a fake. Be that as it may, its moral effect was real, and when a cadet's name was called out for record therein he just had something more to worry about in connection with his chances of obtaining a commission.

In the closing days of the course, individual cadets were singled out to drill the company for brief periods. Here is an example of just one of the many humorous incidents which occurred on the drill field. One temporary commander of the company got along fine until he followed the maneuver of "To the Rear" with the command "Squads Right."

'Halt the coompany! Halt the coompany!" shouted Sgt. Donohoe, running up to the flustered cadet. "And what's yur name? Goode, is it? Well, Goode, that was very bad!"

Master Sergeant Donohoe was born in Galway, Ireland, May 18, 1884. He attended public school in his native city, and later was a teacher. Following his arrival in the United States, he enlisted in the Marine Corps, serving a four-year period. He then enlisted in the Army, serving with Company L, 28th Infantry, in the grades of Private, Corporal and Sergeant for over four years before joining the 112th Aero Squadron at Kelly Field.

Following the suspension of the Ground Officers Training School at Kelly Field, he served for a brief period as drillmaster at the School of Military Aeronautics, Atlanta, Ga., and was then transferred to Garden City, L.I., New York. In September, 1919, he was transferred to Carlstrom Field, Arcadia, Fla. For several months he was on detached service at McCook Field, Dayton, Ohio. He next completed a course of instruction in engine mechanics at the Air Service Mechanics School at Kelly Field. He received appointment as Master Sergeant on July 1, 1920. Sergeant Donohoe continued duty with the Primary Flying School at Carlstrom Field and later at Brooks Field, to which this school was subsequently moved. In June, 1925, he was ordered to the Hawaiian Department, and after a 3-year tour there, he was stationed at Langley Field a similar period, and from January, 1931, until his retirement he served with the 3rd Attack Group.

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